

HOME SERVICE

By Jean M. Kerr

Fall home economics programs this year seem to be heavily loaded with cooking schools.

Newspapers, department stores, distributors, and women's organizations are all sponsoring activities of this kind. Almost every house organ we pick up tells of a cooking school held somewhere in the field, while radio stations and newspapers carry frequent announcements of schools under their auspices.

Outstanding among the better-known schools now in session are the Kroger Food Foundation cooking schools featuring nationally advertised products throughout the Middle West, and the National Live Stock and Meat Board series of newspaper schools.

Free Press School

The annual Detroit Free Press four-day cooking school was held this past week under the sponsorship of MARION SAWYER, home economics director for the newspaper, and formerly in charge of Kelvinator home service activities. For lecturer she selected Mrs. IDA M. CHITWOOD, familiar to Detroit audiences through her work in the school last year.

Mrs. Chitwood is director of the Chitwood School of Cookery, which has maintained a laboratory kitchen in New York City for the past 12 years.

Three months of the year she spends lecturing to American housewives through the medium of newspaper cooking schools; the remaining time is spent in testing equipment and recipes, in visiting manufacturers, and in studying new products on the market.

Proof of her popularity and ability came when almost 10,000 women crowded Orchestra Hall during the four lectures.

Four refrigerators—General Electric, Kelvinator, Grunow, and Electrolux—a gas range, and an Electrochef were used in the demonstrations.

Comparatively little was said in the lectures about the electrical equipment. Ranges were featured during one lecture, especially the "invisible maid" or time temperature control on the gas range.

"Do you remember the old days," asked Mrs. Chitwood, "when we used to have to put our hand inside the oven and guess whether or not it had reached the desired degree of heat? That's all over, now. Nowadays we call that kind of cooking, 'gambling cooking,' because without a temperature control you are gambling the cost of your materials and time on the possibility that you'll get the right amount of heat the first time."

Refrigerators received even less treatment at the lecture we attended. While rolling out some pie crust, Mrs. Chitwood explained that dough could be stored safely in a refrigerator for some time. She halved the dough, and put one half in a dish for storage.

"Now," she said to her assistant, "put that in my Norge refrigerator."

Whereupon, the audience's attention still on Mrs. Chitwood, the assistant unobtrusively slipped the dish into the Electrolux.

Dramatics

Watching and listening to Mrs. Chitwood, we were impressed with the immediate hold she exercised over her audience. A slight drawl, complete self-possession, occasional humor, and a confidential manner of speaking help to bring about the desired effect.

She dramatizes what she is doing at the time. Upon finishing a dish, she stood off and looked at it; then held it aloft, and remarked: "Now, isn't that a picture?"

Baking and broiling are the things in which women are most interested, she pointed out after the demonstration. They like to bake cakes, and she usually includes a cake recipe in each lecture.

Her most successful demonstration, she felt, was simply the broiling of a steak.

Cooking processes of this sort are "right down their alley" to the women attending the lectures. The more elaborate recipes are less familiar to them, and interest is not always so immediately aroused in these dishes.

One thing interested us particularly about Mrs. Chitwood. All of the actual preparation of the foods, rolling of pie crusts, mixing of batters, etc., she did herself.

"Formerly I had my assistants do most of the actual demonstrating while I lectured," she said. "But I have found it better, in these maidless depression days, to do it myself. The women to whom I speak then get the desired impression that what I am doing, they can do. They will not need assistants, or a maid."

For Women Only

This familiar attention-getting headline was used to flag interest in a mailing piece which accompanied the October issue of "Overhead and Underground," Los Angeles Gas & Electric Corp.'s house organ.

Further addressed to "all feminine members of the family," the sheet contained an invitation to attend the annual series of business women's cooking classes which opened under utility auspices Oct. 17.

But the usual cut-and-dried information about who, when, what, where, and how much was interspersed with lively quotations about food, clipped from some untraceable source. They piqued our curiosity—we tried to track them down—and seemed to promise much in the way of interest at the cooking classes.

Here are some of them:

"What can we expect, in matters of taste, from a nation that has been so negligent of one of its senses; from people who have been debauched by the frying-pan; who confess their preference for Scotch whiskey over Eliza madeira and Clos Vougeot Burgundy? What hope is there for a nation that puts sugar on its lettuce, maple syrup on its sausages, and ice cream on its apple pie?"

"The barbarians are at our very gates. Not content with having made us a nation of fried food addicts, ice cream-soda drinkers, gum-chewers, and ketchup eaters, they now menace us with the automat, the sandwich spa, and the unspeakable quick lunch."

But for this depraved nation and its depraved taste, there is still a kind word to be said, as witness the following:

"Never do we hear songs of praise to those unremembered heroes who invented, for our deep and lasting delight, new and rapture-invoking combinations of food. Where lies the body of that mute American who first married the pork to the bean? Where is the genius who guessed that the heart of lettuce so incontinently hungered for the tomato? Name, if you can, the early citizen of Boston who suspected that between codfish and brown bread, there raged a mysterious, almost illicit amour."

And finally a word of encouragement to hungry geniuses:

"All of a man's senses are arts. Remember that every man who has been worth a fig in this world—as poet, painter, or musician—has had a good appetite and a good taste."

DEEP DRAWN STAMPINGS

That Add Beauty and New Features

Our enormous equipment produces massive, completely press-formed, refrigerator cabinet shapes of accurate dimensions at low costs—ready for assembly with other parts in your plant. Design your cabinets to meet the modern trend and let Truscon furnish parts for which you are not equipped. We serve several leading manufacturers.

Mail blue prints for quotations.

TRUSCON STEEL COMPANY
PRESSED STEEL DIVISION
6100 TRUSCON AVENUE • CLEVELAND, OHIO

TRUSCON



Send your order now for a copy of Beer Cooling Equipment Directory

SPECIFICATIONS

Data on 52 makes of draft beer dispensers and 18 makes of bottle beer coolers, including dimensions and capacities of each model, methods of cooling employed, refrigeration requirements, and parts used in the assembled units. Also a description giving a general idea of each make of cooler.

ESTIMATING

Detailed instructions covering the estimation of electric refrigeration equipment and application to beer serving and storage, prepared by engineers of Frigidaire Corp. Illustrations, diagrams, and tables accompany these technical data.

COOLING METHODS

General descriptions, with specific examples, of types of beer coolers now in use—draft and bottle coolers, portable bars, and pre-coolers. Details of Temprite, Russ, and Bishop & Babcock beer-cooling units.

BEER LAWS

A readable digest of laws governing the sale of beer today in 36 states.

BREWING

Concise, step-by-step explanations of processes involved in the manufacture of beer, given by brewmasters of the Anheuser-Busch brewery. And in addition, their suggestions as to how to serve beer properly, and how not to serve it.

112 Pages. Paper cover. Single copy price 35 cents. It is FREE with a new subscription or a renewal of your present subscription to Electric Refrigeration News (\$3.00 per year) or Refrigerated Food News (\$1.00 per year) if you send cash with order.

DIRECTORIES

Alphabetized listings, by products, of manufacturers of draft and bottle beer coolers, beer-cooling units, beer pumps, air pressure gauges, air pressure regulators, beer faucets, beer pipe cleaners, beer taps, carbonic gas regulators, fittings, rubber pipe connections, and commercial refrigeration systems.

ADVANTAGES

A helpful summation of the advantages accruing to users of modern beer-cooling equipment, as compared with the problems and inconveniences of beer serving in pre-prohibition days.

CONTROLS

An illustrated, semi-technical digest of useful thermostatic valve hook-ups for bottle and draft beer coolers, prepared by D. D. Wile of the Detroit Lubricator Co. Facts on pressure control with modern air pumps and carbonic systems, written by R. H. Guyton, refrigeration engineer of Brunswick-Balke-Collender Co. A clear explanation of Russ Soda Fountain Co.'s new system of foam control.

SERVICE

Hints and recommendations on servicing Temprite instantaneous coolers. A digest of recommendations on the care and cleaning of coils as made by leading brewers, chemical manufacturers, and makers of beer coolers.

REFRIGERATION NEWS

ESTABLISHED 1926. MEMBER AUDIT BUREAU OF CIRCULATIONS. MEMBER ASSOCIATED BUSINESS PAPERS.

VOL. 10, NO. 9, SERIAL NO. 241
ISSUED EVERY WEEKCopyright, 1933, by
Business News Pub. Co.

DETROIT, MICHIGAN, NOVEMBER 1, 1933

Entered as second-class
matter Aug. 1, 1927IN TWO PARTS, PART ONE
TEN CENTS PER COPY

REFRIGERATING MACHINE GROUP PLANS NRA CODE

W. S. Shipley Reelected President of Association

YORK, Pa.—A code of fair practices for the refrigerating machinery industry was the main topic of discussion at the 20th annual meeting of the Refrigerating Machinery Association which was held Oct. 18-20 at the Yorktowne hotel here.

More than 40 representatives of the leading refrigerating machinery manufacturers of the United States and Canada, the best representation at a convention in the history of the association, attended the sessions.

All officers of the association were re-elected. They are: W. S. Shipley, York Ice Machinery Corp., president; D. Norris Benedict, Frick Co., vice president; and Fred Nolde of Philadelphia, secretary-treasurer.

Members appointed to the executive committee for the coming year are Henry Torrance, Carbondale Machine Co.; Emil Vilter, Vilter Mfg. Co.; G. A. Heuser, Henry Vogt Machine Co.; and J. M. Fernald, Baker Ice Machine Co. Mr. Shipley and Mr. Benedict are ex-officio members of the committee.

Mr. Shipley presided at the business sessions and was host at the luncheons and banquet arranged for the delegates. Most of the second day of the meeting was spent in inspection tours of the West York and Grantley plants of the York Ice Machinery Corp.

Those attending the meeting were: Ezra Frick, W. H. Aubrey, and D. Norris Benedict, Frick Co.; Emil Vilter and W. R. Kremer, Vilter Mfg. Co.; H. Houston and W. Sykes, Baldwin Locomotive Works; C. W. Vollman and H. McGarry, Linde Canadian Refrigeration Co., Ltd.; Henry Torrance and A. H. Baer, Carbondale Machine Co.; George E. Wallis, Creamery Package Co.; W. H. Harman, H. C. Grubbs, and J. H. Galloway, Baldwin-Southwark Corp.; Henry Vogt and G. A. Hauser, Henry Vogt Machine Co.; J. L. Lyle, E. T. Murphy, and Thornton Lewis, Carrier Corp.; H. A. Feldbush and S. R. Hirsch, Worthington Pump & Machinery Corp.; C. A. Baker and J. M. Fernald, Baker Ice Machine Co.; H. E. Bollinger, Phoenix Ice Machine Co.; Lee Nusbaum, Pennsylvania Engineering Co.; J. C. Worker, American Engineering Co.; H. B. Carey, Automatic Refrigerating Co.; Fred Nolde, secretary, Refrigerating Machinery Association; L. M. Church, Philadelphia section, Refrigerating Machinery Association.

COMMITTEE WILL STUDY UNFAIR TRADE PRACTICES

NEW YORK CITY—To study and rectify unfair trade practices in American business and industry, a new committee has been appointed by Gerard Swope, president of General Electric Co., in his capacity as chairman of the Business Advisory and Planning Council for the Department of Commerce.

Lincoln Filene, treasurer and board chairman of William Filene Sons Co., Boston, is head of the new committee, according to Mr. Swope. Other members are as follows:

Everett G. Griggs, chairman of the board, St. Paul & Tacoma Lumber Co., Tacoma, Wash.; Lucius Eastman, president of Hill Brothers, New York City; Dr. Paul F. Nystrom, professor of marketing, Columbia University, New York City; L. D. H. Weld, director of research, McCann-Erickson, Inc., New York City.

Roy Dickinson, president of Printers' Ink Publications, New York City; John S. Burke, president, B. Altman & Co., New York City; James A. Goldsmith, president, Hess & Goldsmith, New York City; Morris E. Leeds, president, Leeds & Northrup Co., Philadelphia.

H. W. NEWELL TOURS WEST ON WINTER SALES PLANS

DAYTON—H. W. Newell, Frigidaire Corp.'s vice president in charge of sales, has just completed a tour of Frigidaire distributing organizations in all major cities east of the Rockies.

New Refrigeration Directory & Market Data Book to be Issued Next February

The 1934 edition of the REFRIGERATION DIRECTORY AND MARKET DATA BOOK is scheduled to appear in 3½ months (Feb. 15, 1934). It will be a fat volume with substantial binding having a page size (6½x8½ inches) the same as the first book issued in 1932. According to present plans, the single copy price will be \$3.00.

Owing to the many changes in the manufacturing complexion of the industry during the past two years, the directory information will show scores of new names and a great many old addresses will be deleted. Questionnaires have been going out to every known concern making refrigeration equipment, parts and supplies and returns are coming into the Business News Publishing Co. with every mail.

Every company actively in business will be listed four ways: alphabetically, geographically, by trade names, and classified according to products. As in the 1932 edition, the executive personnel, telephone number, branch factories, and branch offices will be listed in the geographical section.

Classification of New Products

Many new products will appear in the classified section, particularly equipment and supplies used in new applications such as air conditioning and beer cooling. Related and companion merchandise will include a wide variety of products being distributed through the refrigeration trade. In listing the suppliers of such products as electric ranges, oil burners, washing machines, etc., only those makers who are prepared to sell

through refrigeration distributors and dealers will be given, thus avoiding the waste and confusion which results from listing products distributed solely through other channels.

In a similar manner the listing of independent service companies will be limited to those able to give reasonable evidence of their stability.

Statistical Section

More important than ever before will be the statistical section of the book. When the first edition was compiled, statistical activity was in the early stages. Every scrap of data which could be found was printed. Much progress has been made, however, during the past two years and the new book will contain a great array of facts and figures all arranged and correlated for ready reference.

Specifications of household and commercial refrigerating machines, cabinets, and major parts will be listed in detail for every make and model on the market. This will be the most comprehensive collection of equipment specifications ever published. It will include revised data on all the groups and classifications which have appeared from time to time in the columns of ELECTRIC REFRIGERATION NEWS and REFRIGERATED FOOD NEWS.

Altogether the new DIRECTORY will be the big book of the industry, a volume which every engineering, production, financial, and sales executive, every distributor, dealer, salesman, and serviceman will want to have within convenient reach at all times.

Norge Starts New Plant Addition

MUSKEGON HEIGHTS, Mich.—Work was started here last week on a one-story addition to the steel plant of Norge Corp.

The addition will add about 10,000 sq. ft. of floor space to the steel plant, nearly doubling its size. Work on the new building is expected to be completed about Nov. 25.

The new building will be 56 ft. wide and 170 ft. long. Foundation will be heavy enough for later addition of a second floor, if required.

In Detroit, construction is under way on an addition to the company's office building, according to H. H. Whittingham, secretary of Norge Corp.

NEW DEPT. TO SELL SIROCCO ACCESSORIES

DETROIT—Establishment of a new appliance accessory department to care for the company's business in multi-blade wheels for oil burners, dryers, air-conditioning units, and other accessories has just been announced by the American Blower Corp., through H. E. Barth, general sales manager.

While the corporation manufactures lines of heating, ventilating, air conditioning, air washing and drying equipment, it has for a number of years furnished other manufacturers with multi-blade wheels and other fan and blower accessories.

Cunningham New President of Trupar

DAYTON—R. O. Cunningham, formerly chief executive of Allied Products, Inc., Detroit automotive supply company, has succeeded Harry J. Hunt as president of Trupar Mfg. Co. here, manufacturer of Mayflower electric refrigeration, according to W. M. Myers, treasurer.

Mr. Cunningham, who has been with Trupar since last winter studying the operation, will assume complete charge of that concern's operations.

Mr. Hunt will move to Hamilton, Ontario, where he will take over the Canadian plant of the Trupar Mfg. Co., and direct Canadian operations on Mayflower refrigeration products.

ENGINEERS DISCUSS NOISE ELIMINATION

DETROIT—Sound-absorbing materials and their usefulness in reducing noises in automobile bodies and compressor compartments of electric refrigerators were spotlighted Saturday night in the annual meeting of the Mid-West section of the Andrew F. Johnson Alumni society.

Participating in the discussion were J. W. Votyka of LeBaron-Detroit Co., F. J. Zand of the Sperry Gyroscope Co., Dr. J. A. Nagy and J. W. Beckman of the J. A. Nagy Co., and W. A. Wagstaff of Norge Corp.

Mr. Beckman first mentioned the development of equipment which relieved people from the smoke nuisance (more perfect combustion), that which is relieving people from hot weather (air conditioning), and predicted that a similar development is to be relief from injurious noises.

Sound was defined as any pressure variation in the atmosphere which is capable of stimulating the hearing sense. The frequency range of normal auditory experience is from 20 to 20,000 vibrations per second, he said.

Sound waves travel in absolutely straight lines, and their effect varies as the square of the distance from the source. Quoting E. S. Buck, consulting engineer of Cincinnati, Mr. Beckman pointed out that if a sound wave strikes the side of a 45-degree angle, it will rebound from it at a 45-degree angle forward and toward toward the other side of the duct, just as a billiard ball rebounds from a cushion.

"If we should substitute a deep cushion of spongy rubber for the quick, springy reaction of the very dense rubber billiard table cushion,"

(Concluded on Page 4, Column 4)

NEW NORGE TO BE ANNOUNCED NEXT MONDAY

Newcomb Will Outline Commercial Plans At Meeting

DETROIT—Norge distributors from all sections of the country will gather in Detroit this week-end for their annual meeting which opens Monday morning, Nov. 6, to run four days. Most of the distributors will head-quarter at the Detroit-Leland hotel, while the convention sessions will take place at the Players Club.

At the first meeting on Monday morning, President Howard E. Blood and John Knapp, vice president in charge of sales, will present the 1934 Norge household refrigerator line. Entire afternoon session will be devoted to discussions of new advertising and sales promotion plans, led by James A. Sterling, advertising-sales promotion manager.

Tuesday morning, commercial refrigeration will be spotlighted. Harry Newcomb, formerly Copeland commercial manager and now Norge Corp.'s commercial manager, will conduct this meeting.

Ed Hughes, Norge commercial engineer, will talk on the company's line of beer coolers, and L. S. Keilholz, air-conditioning engineer, will present the Norge air conditioner to the distributors. Mr. Blood will outline construction and sales features of the Rollator stove.

Afternoon of the second day will be spent by the distributors in making a tour of the company's rollator plant, which has been moved to new quarters near Norge's general offices since the distributors' convention last year.

John Knapp will take the stage on Wednesday morning to talk on Norge's Economaid washer line. Afternoon of that day and all of the following day will be given over to individual conferences of distributors and Norge executives.

Feature of the convention will be a complete display of all Norge products and advertising-sales promotion materials in the Colonade room of the Detroit-Leland. A half-dozen or more offices at the club are being prepared for Norge officials' conferences with distributors.

NEMA SEPT. UNIT SALES DOUBLE 1932 SEPT. MARK

DETROIT—Unit sales of household electric refrigerators to distributors and dealers, as reported by members of the Refrigeration Division of National Electrical Manufacturers Association for September, were 60,840 as compared with 30,513 in September, 1932—an increase of 99.39 per cent, according to report issued by Louis Ruthenburg, consultant to that organization.

Stocks in the hands of distributors and dealers declined 3.34 per cent from August levels, indicating sales to users correspondingly higher than manufacturers' sales to distributors and dealers. Dealers' stocks, despite doubled sales volume, are only 10.88 per cent above stocks on hand in September, 1932.

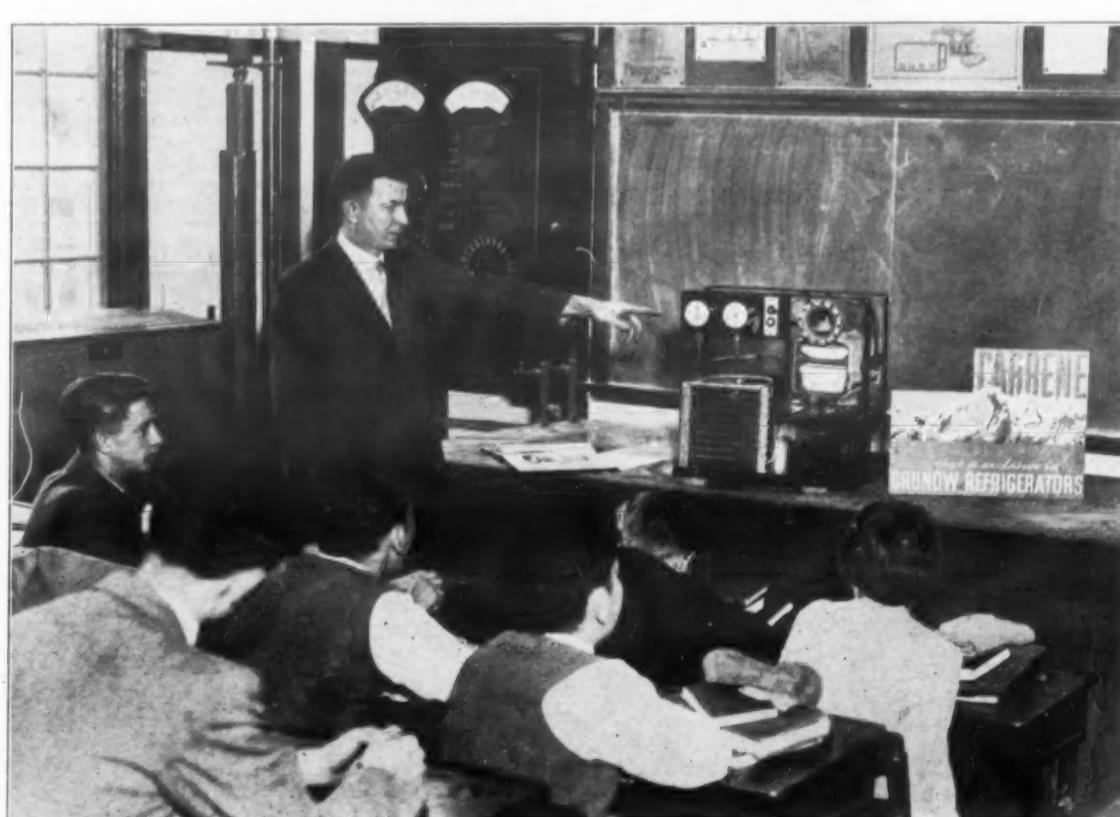
Leading manufacturers have announced price advances to partially cover marked increases in costs of labor and material. Further price advances are expected as 1934 models are announced.

Members of the Refrigeration Division of Nema are responsible for approximately 90 per cent of refrigerators sold in September.

CHICAGO SEEGER BRANCH TO OPEN NEW QUARTERS

CHICAGO—Quarters of Seeger Refrigerator Co.'s branch here are being moved from 666 N. Wabash Ave. to 835-41 Washington Blvd., according to L. C. Keely, manager. Approximately 4,000 sq. ft. in the new salesroom will be used for display of Seeger cabinets, coolers, display cases, and beer-cooling equipment.

A model butcher shop is to be installed in one window. Official opening of the new quarters is planned for Nov. 17 and 18, according to Mr. Keely.



Students at John Adams High School, Ozone Park, N. Y., are told the story of refrigeration by H. F. Brieger, service manager of North American Radio Corp., Grunow distributor in New York City.

BY GEORGE F. TAUBENECK ---

What the Underwriters' Laboratories Do

Among the people we have been meeting often in Chicago are HARRY WILLIAMS and JOHN LINEBAUGH of Frigidaire, "TIMMIE" TIMMERMAN of General Electric, and C. H. TANGER of Servel.

These prominent engineers, with the exception of Mr. Williams, are all members of Underwriters' Laboratories Industry Conference on Refrigerating Equipment.

Mr. Williams is chairman of the technical committee (of which the first-mentioned group is a subcommittee) of the refrigeration division of the National Electrical Manufacturers Association; and thus becomes godfather—and an active godfather he is, too—of the subcommittee.

Of no small importance is this industry conference.

In many major cities of the United States, an appliance cannot be installed until it has been listed by the Laboratories.

These men are to be found at the Underwriters' Laboratories testing station at 207 East Ohio St., Chicago (which is on the edge of Towntown, between the Tribune and Wrigley buildings and the lakefront) frequently.

The Underwriters' Laboratories like to say that they "list" appliances, rather than "approve" them. This listing is covered by a card distribution service all over the nation. Printed lists are issued annually, the following include listed refrigerating equipment:

"List of appliances inspected for accident hazard, also list of inspected electrical appliances."

To this annual list a monthly supplement, the "Electrical Bulletin," has recently been added for electrical appliances, including refrigerating machines.

When a manufacturer has a line of electric refrigerators he wants listed, he sends one or more complete refrigerators representative of that line, and three extra parts of each pressure container (for hydrostatic tests) and of each electrical device (parts which are already listed by the Laboratories need not be retested).

Representatives may be sent along with the machine to adjust it at the beginning of the test, and to watch the progress of the trial. The Laboratories do no adjusting themselves.

Nature of the Tests

Let us describe an investigation briefly. First the refrigerators are operated for approximately a week in a room held at normal temperature (70 to 80° F.), without a load. Recording thermometers chart the temperatures held during this period in the food compartment and at the cooling unit. High and low side pressures are also charted. This is the "get acquainted" period.

Then the refrigerators are tested in the same manner in a hot room, one kept at 140° F. No attempt is made to control the humidity, for the Laboratories are interested in the efficiency of unit and cabinet only insofar as they may have a bearing on the inherent hazards of the refrigerator.

From 24 to 36 hours the refrigerators are kept in this hot room, so that the engineers can determine how much higher the pressures run under these conditions.

After a time, they pull the plug and let the pressures equalize over night. They open the refrigerator door, and

let the refrigerator inside and out come up to an ambient of 104°. This is done to determine if the machine will pull the refrigerator down to a normal cycling period without burning out the motor or otherwise causing damage.

Because firemen and others must be safeguarded, the Underwriters' Laboratories insist that manufacturers must either provide a pressure relief device for release of pressures in case of fire, or submit their refrigerator to a fire test. Most machines have parts of their system which will serve in lieu of pressure relief devices—such as bellows, soft-soldered joints, and the like.

High side pressure containers must withstand at least five times the maximum pressures developed during the hot room tests; while low side containers must have a factor of safety of four, based upon the vapor pressure of the refrigerant at 70° F.

If a pressure relief device (such as a frangible disc or a fusible plug) is provided, five samples must be submitted for testing for uniformity of operation.

To check the operation of the overcurrent protection, an additional motor is employed and loaded mechanically with a brake. It is run just under the tripping current of the device—to see if hazardous conditions are produced at that crucial point.

In addition to all these tests, the Laboratories conduct a complete examination of all electrical equipment, including the wiring, which must be listed and labelled.

In checking the wiring installation, they look to see if it can be subjected to oil or grease, note possible contact with the fan blade or other moveable parts, and determine if it is necessary to use rigid or flexible conduit.

Separate tests are run for commercial refrigeration and air-conditioning equipment. In general, these tests are similar to the investigation of household refrigerators.

Who and What Are the Underwriters' Laboratories?

Just what is the Underwriters' Laboratories, and how does it get that way? Well, it might be answered thus:

Underwriters' Laboratories is a corporation chartered November, 1901, by the State of Illinois, authorized to establish and maintain laboratories for the examination and testing of devices, systems, and materials for the purpose of reporting thereon to insurance organizations.

It was established and is maintained by the National Board of Fire Underwriters, for service—not profit.

The object of Underwriters' Laboratories is to determine by reasonable, practical, and independent investigations, the relation of devices, systems, and materials to life, fire, and collision hazards, and theft and accident prevention.

This work is undertaken as one means of reducing the enormous and disproportionate loss of life and property by fire, theft, and accident.

Underwriters' Laboratories of Canada was formed by Underwriters' Laboratories of Illinois, U. S. A., for the purpose of carrying forward the work in Canada, the charter being granted by the Dominion Government.

The Chicago plant occupies a three-story and basement building of fire-resistant construction, containing about 100,000 sq. ft. of floor space, with a

frontage of 266 ft.

The main building in Chicago is, perhaps, the best example in America of fire-resistant construction, furnished with fire-resistant finish and equipment and operating properly safeguarded machinery.

Brick, terra cotta, concrete, stone, steel, and iron are used exclusively in the structural features.

Window frames and sash are of metal with wired glass, the doors are of metal, and the desks and filing cases in the main office are of steel.

No wood or other combustible material is used in any portion of the finish. In this model building and its equipment the Underwriters have gone to the extreme in adopting in their own property the measures they recommend in the property of others.

The New York office is equipped for the conduct of examinations and tests of electrical devices under the same conditions as those afforded at the principal office and testing station in Chicago.

The San Francisco office is equipped for the conduct of examinations and tests of most electrical devices. Certain sizes, ratings, and types must be sent to the Chicago office as the larger equipment cannot be economically duplicated.

Officers include: A. G. Dugan, chairman; Dana Pierce, president, Chicago; A. R. Small, vice president, New York City; D. B. Anderson, secretary, Chicago; L. B. Headen, treasurer, Chicago.

The electrical council comprising about 45 members is headed by Dana Pierce, Chicago, chairman. The membership represents various interests such as engineers for underwriters, state and municipal authorities, etc.

Copies of standards and reports which are submitted to the Fire, Electrical, and Casualty Councils are also filed with the Bureau of Standards, Department of Commerce, Washington, D. C.

How to Get an Appliance Listed

A submitter desiring to secure an investigation and report on his product may address Underwriters' Laboratories, giving a fairly complete description of his product so that its character, purpose, size, rating, and other features may be understood.

Such information makes it possible for the Laboratories to classify the product and determine, at least in a general way, the probable nature and extent of the necessary examinations and tests.

An application form is then sent to the submitter with information as to the preliminary deposit to be made and the character and number of samples that are needed. On return of the application accompanied by the deposit, to the Laboratories, the investigation and tests are begun upon samples at an early date as is compatible with other work already in progress.

If requested, the details of the article, the submitter's claims for it, and the tests proposed will be discussed with the submitter either by correspondence or in an interview, and an appointment will be made for him to witness the tests if he desires to do so.

The majority of underwriters in the United States and many Federal, state, and municipal authorities, plant operators, and architects, building owners, and users either accept or require listing by Underwriters' Laboratories incident to their recognition of devices, systems, and materials having bearing

upon life, fire, and collision hazards, and theft and accident prevention.

It should, however, be noted that findings of Underwriters' Laboratories in any case represent only its independent opinion arrived at in accordance with its aims and purposes.

The correctness of its opinion cannot be guaranteed, nor can the Laboratories guarantee that its findings will be accepted or recognized in any case.

There exist permanent arrangements between Underwriters' Laboratories and the Bureau of Standards of the Department of Commerce of the Federal Government whereby, in the event of a fixed difference of opinion on any engineering or technical matter between Underwriters' Laboratories and any of its clients, the question at issue may be submitted to the Bureau for decision.

At the conclusion of the Laboratories' investigation (and after consideration by the appropriate Council, if the report is submitted to it) a copy of the report is sent to the submitter.

Additional duplicate copies of the report are available to the submitter upon request and at cost of printing.

Only products manufactured commercially and concerning which the actual manufacturer is known are eligible for listing, but the Laboratories may receive, examine, and test articles in the model stage and render to the submitter a report for his information and guidance in future development.

A manufacturer desirous of securing an examination and report with a view to listing by Underwriters' Laboratories on a device, system, or material, first makes a preliminary deposit and on completion of the work pays the balance of the Laboratories' cost as shown by accurate detailed records.

Costs of Testing

To avoid the incurrence of cost beyond the expectation of the applicant a limit of expense is fixed wherever possible beyond which charges are not made.

Amounts of the deposits are based upon the nature and extent of the work that it is anticipated will be required in examinations and tests.

Cost of experimental work is practically the same for any given appliance, whether or not the samples show compliance with the requirements under which they are examined. The applicant's obligation to pay the charge is, therefore, not contingent upon whether the opinion rendered does or does not lead to a recommendation for listing.

These schedules cover only one examination and one set of tests on a single pattern of device, system, or material, concluded by a report to the submitter, of the results thus obtained.

A statement of the cost of the work is rendered with credit for the amount of the preliminary deposit. The debit balance, if any, of this statement is due on presentation. Where costs do not aggregate the amount of the preliminary deposit, the balance will be returned to the submitter.

A request for further examination or set of tests is considered to be a new application and may require the payment of a second preliminary deposit.

The charges made in the Laboratories' work do not include costs incident to extension of credit, or the allowance of discount.

The Laboratories are open for inspection at all times. Anyone interested in visiting the institution described briefly in the foregoing should arrange to the visit the main office and see for himself what's going on.

Ice in Sedans

JIM IRWIN, Frigidaire director of publicity, dropped us a note the other day proving that even as sees-all knows-all a person as WALTER WIN-

HELL'S secretary calls refrigerators Frigidaires. Here it is:

"Just in case that eagle-eyed staff of yours missed the current Frigidaire crack in Walter Winchell's column, here it is:

"You might get a paragraph out of this: No trucks are permitted on fashionable Park avenue—not even furniture moving vans or ice trucks. So, as a result, the ice men who deliver their wares to the few places that haven't Frigidaires, have to do it in sedans, loaded to the ceiling with ice blocks."

"No doubt you knew that Frigidaire ice cubes have been rubbing noses with society, but did you know that it was this very contact with the high class ice cubes that made those fashionable noses turn up?"

Beauty in Slidefilms

General Electric has a new sound-slidefilm sales training course for all-electric kitchen salesmen which is so good it ought to deprive a flock of sales supervisors of their jobs.

One day not long ago we took the entire outfit—which consists of a portable phonograph, a portable film projector, and a case of coordinated records and slidefilms—into a quiet room, and took the course all by our lonesome.

It's simple to run the outfit. Just take out film No. 1 and record No. 1, put on the record and insert the film, and watch and listen. Every few seconds the sound of a bell interrupts the speaker on the record; whereupon you give a knob on the projector a twist and bring the next picture into view.

Some distinguished radio announcers do their stuff on these records (including one bird who, ART SCAIFE claims, breaks FLOYD GIBBONS' speed record for words per minute), which tell the prospective salesmen just what to do, and when, and how. One of these announcers is no less a personnage than JAMES WALLINGTON, himself.

Running through the slidefilms is a model of such beauty that one sometimes misses important parts of the lecture in the records just looking at her. She has a magazine cover face and a figure of the kind you often see in Fisher Body advertisements.

Thinking G-E distributors might want to know something about the girl who has been interrupting their sales meetings (she appears on films 2, 8, 9, 10, 11, and 13—and is in most of the pictures on films 9 and 11), your favorite news-sniffer tracked down some interesting facts about her.

Her name is DOROTHY NEDDER-MEYER. She is free, white, and 21, and lives at home with her mother. Address: 4527 Van Dyke, Detroit. Phone IVanhoe 7931.

Around Detroit advertising circles she is known as the "Detroit Edison girl," for her picture appears in nearly all of that utility's advertisements.

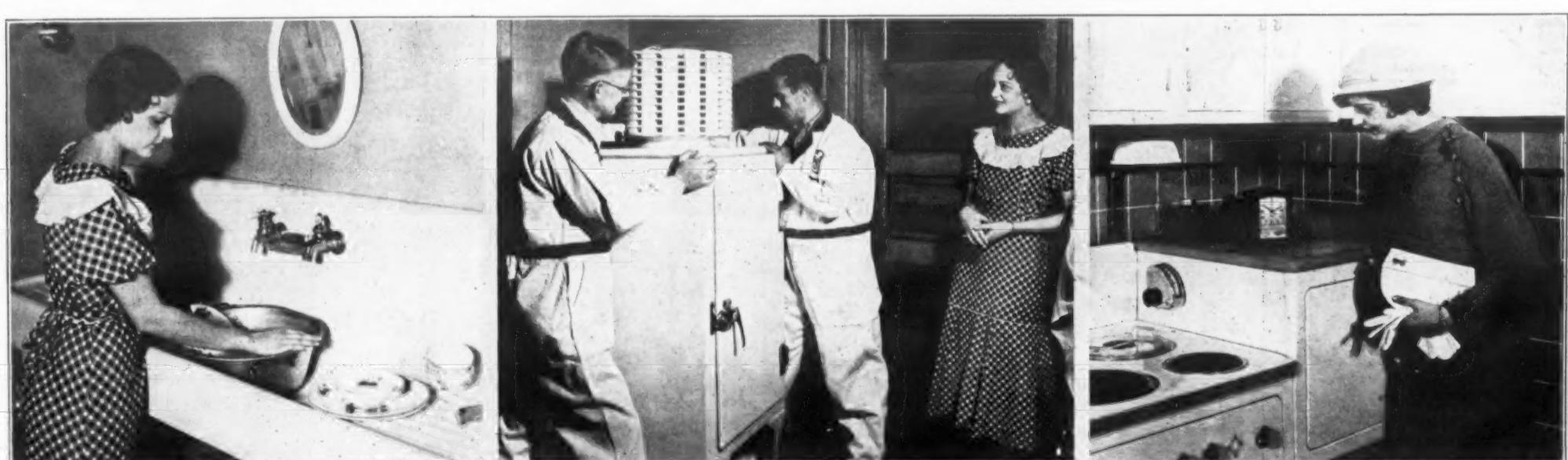
She has also been the "Copeland girl," and her face and figure have appeared on much Copeland direct mail material in the past. For three years she was secretary to genial ED BROWN, who was vice president in charge of finance (and one of the chief stockholders of Copeland) before that company's untimely demise.

Following the collapse of Copeland last summer she was engaged to pose as Mrs. Housewife for these G-E slidefilms. Before she was half finished on this task (the substitute model is perhaps better, because she doesn't disturb your trend of thought) Chevrolet Motor Co. interrupted the work by hiring her as a secretary.

Next, we suppose, we'll be seeing her in Chevrolet advertising. And Frigidaire. And, no doubt, Body by Fisher!

Rest your eyes on the pictures at the bottom of this page—all of Dorothy—which are sample "frames" taken from one of the slidefilms. Mebbe they'll give you a general idea.

G-E Salesmen Learn Their Jobs from Seeing Pictures Like These



A G-E REFRIGERATOR SALE IS ONLY THE BEGINNING!

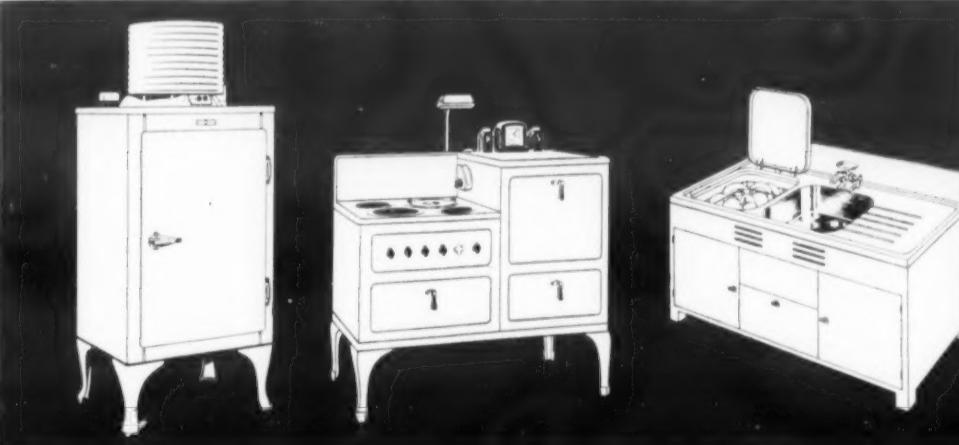
WHAT SHE WANTS



WHAT SHE SEES . . .



WHAT SHE EVENTUALLY BUYS



**General Electric
is NOW appointing
New Dealers
in open territories**



THE modern housewife has seen, heard or read about the General Electric Kitchen and now considers the purchase of a refrigerator as the first step towards the complete modernization of her kitchen. An all-electric kitchen in her home is now more than a dream. It is a goal. She will add other General Electric kitchen appliances just as fast as she possibly can. Thus G-E ensemble selling is stepping-up the buying motives of refrigerator shoppers.

Now, more than ever before, she will choose a General Electric refrigerator in planning for her all-electric kitchen. Its record for lifetime dependability has never been equalled. It is styled along lines the years will not obsolete. It will fit into her modern kitchen program now or years from now.

Once she becomes a refrigerator customer she is always a prospect—a potential owner of a G-E Range, G-E Electric Dishwasher and other G-E kitchen appliances. The General Electric dealer gets all of her business, making a profit every time she takes another step towards her goal! In addition, every General Electric refrigerator owner in the G-E dealer's territory is a preferred prospect for the complete General Electric Kitchen.

General Electric invites dealers in open territories to write or wire for details of the G-E franchise. If you measure up to G-E standards, you can start on a modest scale and GROW as big and successful as you want, with the G-E ensemble selling plan back of you. Make the start now towards a permanent, profitable, year 'round business! Address your inquiry to General Electric Company, Specialty Appliance Sales Department, Section DF111, Nela Park, Cleveland, Ohio.

GENERAL ELECTRIC
REFRIGERATORS • RANGES • DISHWASHERS

KANSAS CITY SHOW ATTENDED BY 15,000

KANSAS CITY, Mo.—Twelve makes of electric refrigerators were exhibited at the Electrical Progress Show held here during the week of Oct. 2 under sponsorship of the Electric and Radio Association of Kansas City in cooperation with the K.C. Power & Light Co.

Fifteen thousand persons attended the exposition, which was held in the city's Pla-Mor Arena, according to G. W. Weston, secretary-manager of the electrical association.

Electrical appliance distributors comprised a majority of the exhibitors. There were 15 displays of refrigerators, 15 of radios, and 13 of other electrical appliances.

The local power company used six spaces for its model kitchen and better lighting exhibits.

Makes of refrigerators displayed were:

Crosley, Frigidaire, General Electric, Gibson, Grunow, Ice-O-Matic, Kelvinator, Leonard, Majestic, Norge, Stewart-Warner, and Westinghouse.

70,000 PERSONS ATTEND EXPOSITION IN NEWARK

NEWARK—Seventy thousand persons attended the third annual Electrical Show held Oct. 7 to 14 here under the auspices of the Essex Electrical League. Thirty-seven distributors of refrigeration, radio, and other electrical appliances had exhibits at the exposition.

Featured at the show were demonstrations by J. B. Taylor of General Electric Co.'s House of Magic, broadcasts over station WOR by radio stars, and exhibitions of the Garrison fire detecting system.

Grunow Announces 11 Distributors

CHICAGO—Announcement has been made of the appointment by General Household Utilities Co. of 11 new distributors to handle the Grunow radio line.

The new distributors are:

Anthracite Radio Sales Co., Scranton, Pa.; Cedar Rapids Auto Supply, Cedar Rapids, Iowa; Electric Appliance Distributing of Altoona, Pa.; Flat Top Supply Co., Bluefield, W. Va.; James Supply Co., Chattanooga, Tenn.; Morris Distributing Co., Albany, N. Y.; Peaslee-Gaulbert Co., Louisville, Ky.; Philadelphia Distributing, Inc., Philadelphia; Salt Lake City Hardware Co., Salt Lake City; Shapiro Sporting Goods Co., Newburg, N. Y.; and Sides-Duda-Meyers Co., Des Moines, Iowa.

Jersey Dealers View Norge Broilator

NEWARK—New Jersey electrical appliance dealers operating under B. & O. Radio, Inc., newly appointed Norge distributor here, attended a meeting at the company's headquarters recently where the Norge refrigerator and Broilator stove were presented by M. G. O'Hara, Norge eastern sales manager.

Featured on the evening's program was an address brought by Televoice from Maj. Howard E. Blood, president of Norge Corp., who spoke from his Detroit home.

Other speakers were H. J. Stapleton of Newark's Public Service Corp., Ben Oppenheim, E. G. Fisher, Al Hammer, and Ivan McCullough of the distributorship, Larry Harris, Norge district representative, and Curtis A. Wessel, editor of Talking Machine and Radio Weekly.

Air Conditioning a Business Getter For the Drug Store

By Frank C. Lyons,* Air-Conditioning Division, Frigidaire Corp.

WITH the highly competitive and complex state that has been reached in business generally today, the successful merchandiser is feeling out for something new. Products are at the point where their perfection is accepted as standard.

Climate is a vital factor in drug store trade. In warm weather, the soda fountain trade is at its peak. But, as in a restaurant, the lunch trade is susceptible to a falling off in volume due to the fact that generally speaking people eat less than they do in the cooler weather. In hot weather people buy what they have to. Given comfort in a store they will remain longer and probably buy more.

Here is where air conditioning can attract new business. It is the "something new" that business has been looking for. Its effect on business is due both to psychological and to physiological reasons.

The human being wants to eat in comfort, and the amount that he eats actually is governed by his physical condition. Therefore, air conditioning, or comfort cooling as it is termed sometimes, actually can bring about an increase in business quickly and can hold the business so obtained.

The human being is a generator of heat which must be dissipated. Actually the human body is a marvelously constructed machine in which over-generation of heat is compensated in various ways. One of these methods is by a reduced appetite.

Now, it is self-evident that if people

(*Talk before the joint convention of the Affiliated Drug Stores and Associated Chain Drug Stores at Chicago, September 15, 1933.)

are going to eat as much in the hot months as they do in the cooler months this body heat must be dissipated. If it is properly dissipated, appetites return. And if the room they are eating in is comfortable, they then are bound to return. They are bound to tell others of this dining room, or store, and naturally business increases.

Body heat may be dissipated in three manners:

1. Convection, which is transference to cooler air.

2. Radiation, or by transference to cooler objects surrounding the body.

3. Evaporation, or transference by evaporation of skin moisture.

Air conditioning accomplishes this dissipation of body heat by means of convection and evaporation, absorbing the excess moisture, or dehumidifying the air until it is at the comfort stage.

Habit takes people to the dining room. They want a cool place to eat. And when they find a drug store or a restaurant that is cool and comfortable they are going to stay longer, and they are going to eat more. Naturally, this means increased profits through larger unit sales.

Present business and economic conditions plainly indicate a definite need for an aggressive plan for business building. The time is past for price slashing. The time is past when better food, lower prices, redecoration of the premises, good music or better service can be depended upon to increase business.

Business can be built up only by giving the people what they want—and the big thing that they want is comfort.

Air conditioning accomplishes two major objectives.

1. It attracts more patrons.

2. It increases the appetite.

Incidentally, it builds up good will, and, by providing better working conditions, it accomplishes better feeling between employer and employee.

Air conditioning really presents no mystery. In effect it is simple. It reduces temperatures and at the same time drains the air of excess humidity. Since the earliest days man has tried to devise means of keeping cool. Cleopatra had her slaves fan her on her luxurious barge floating down the Nile. This merely kept the air in motion. For thousands of years the human race has used fans, eventually connecting up a motor to provide power and giving constant circulation of air.

For actual comfort four problems must be taken into consideration. Four conditions must be controlled. These are:

1. Temperature.

2. Humidity.

3. Air purity.

4. Air movement.

The answer to this is air conditioning, which provides temperature control, regulation of humidity and cleanliness. Electric refrigeration has made this possible. Through electric refrigeration, it has become possible to cool the air in a room, or in a building. At the same time, it accomplishes dehumidification through condensation of excess moisture.

A room that has a temperature of 75° F. may be more uncomfortable than a room where the temperature is 85° F. The reason for this is that the humidity may be higher with the temperature at 75° than it is at 85° F.

Air conditioning presents to the drug store operator today the "something new" that is needed to build up business. It attracts business, it results in larger orders from customers and, through making the store comfortable, serves to build up the *esprit de corps* of the working staff.

32 EXHIBITORS TAKE PART IN SAN DIEGO SHOW

SAN DIEGO, Calif.—Fifty-one thousand persons attended the electrical exposition held here Oct. 4 to 8 under auspices of San Diego county's Bureau of Radio and Electrical Appliances, according to J. Clark Chamberlain, secretary-manager of that organization.

Taking part in the exposition, which was held in San Diego's Municipal Pier Auditorium, were 32 exhibitors. With one exception, all makes of refrigerators sold in this area were represented at the show.

DETROIT ENGINEERS DISCUSS NOISE ELIMINATION

(Concluded from Page 1, Column 4)
Mr. Buck said, "the ball would not rebound vigorously, but would stop right there if we made the sponge soft and deep enough. So it is with sound."

"The ideal material would consist of a surface similar to a honeycomb with infinitesimal holes of sufficient depth to absorb and trap the sound waves," according to Mr. Buck.

LEONARD FRANCHISES 56 NEW RETAILERS

DETROIT—Fifty-six new dealers in 22 states have been franchised by the Leonard Refrigerator Co. here, according to Godfrey Strelinger, sales manager.

The new dealers, by states, are:

California—Cinnick Electric Co., Oakland.

Colorado—Bell Mercantile Co., Oak Creek; J. G. Schmueser, New Castle; Daniel's Pharmacy, Hugo; Haggard Lumber & Mercantile Co., Erie; H. H. Jeffrey, Durango.

Connecticut—I. Kopkind, New Haven; Blankenfeld's Furniture Co., Derby.

District of Columbia—Monarch Radio Shop, Washington.

Georgia—Rich's, Inc., Atlanta; Henry Motor Co., East Point; Sparta Lumber Co., Sparta.

Idaho—Rexburg Mart, St. Anthony.

Illinois—Burke Hardware Co., Waukegan.

Indiana—Refrigeration Mart, 2440 E. Washington St., and Rich & Co., 16th and Illinois Sts., both in Indianapolis.

Massachusetts Retailers

Massachusetts—Kimball Furniture Co., and Forer Oil Burner Co., both in Springfield; Boyne Electric Co., Lawrence.

Michigan—Philco Radio Sales, Lansing.

Nebraska—Attebery's Drug Store, Morrill; Carey Brothers, Dalton.

New Jersey—Binder's Electrical Supply Co., Trenton; John I. Marion, Butler; Milton R. Hitchner, Elmer; A. Oliva, Hammonton.

New Mexico—Warder Hardware & Furniture Co., Springer; Raton Mercantile Agency, 140 S. Second St., Raton.

New York—Alex Scott, 71-73 Cedar St., New Rochelle; Kingston, Burns & McDonald, Potsdam; Louis Lerman Co., Canastota; Gerald Bryce, Deposit; Sporn's Hardware, Brooklyn; F. W. Newman & Son, Albany.

Ohio—Swope Electric Co., Canton; Derhammer Motors, Inc., Barberton.

Oklahoma—Main Drug Store, Webb City.

Pennsylvania—William Gottlieb, 3828 Lancaster Ave., Philadelphia; Oscar's Radio & Electric Co., Hazelton.

Five Rhode Island Dealers

Rhode Island—Reliable Furniture Co., Woonsocket; W. J. Nixon Hardware Co., 1275 Cranston St., Providence; John R. Carberry, Lakewood; Winkleman & Finkelstein, Centerdale; Charles Falugo, Bristol.

South Carolina—People's Hardware Co., Walterboro.

Utah—Radio Studios, Inc., 136 East Third St., Salt Lake City.

Wisconsin—Bohn-Isenberg Hardware Co., Baraboo; Charles H. Wieland, Berlin; Bullard Electric Co., Evansville; Real Radio Service, 1928 West Vliet St., Milwaukee; McCarthy, Reuter, Haas Co., Burlington; J. C. Hames, Waubeka; Rott Hardware Co., Richland Center.

Wyoming—Hawk Springs Lumber Co., Hawk Springs; Midwest Hardware Co., Lusk; Ed Althoff Motor Co., Powell.

McCord Refrigeration Products

Commercial Evaporators

Domestic Evaporators

Condensers

McCord Ice Trays

Spiral Finned Tubing

Spiral Copper Finned Iron,

Steel or Copper Pipe

McCord Radiator & Mfg. Co.

DETROIT - MICH.

WIN WITH YOUR WINDOW

Seven cash prizes totaling \$700 are offered for winning electric refrigerator window displays on exhibition between November 15th and Christmas. Every retail sales outlet for Electric refrigerators is eligible.

There are separate prizes for dealers and for central stations whether or not they retail. There are prizes for windows of less than 100 square feet floor area and prizes for larger windows. In each class the first prize is \$100 and the second prize is \$50.

There is a \$100 prize for the local Electric Refrigeration Bureau which, in proportion to its membership, is best represented by quantity and quality of entries in this contest.

The rules are simple. There is nothing to be submitted but a photograph and a brief letter of explanation.

Decide now that you are going to win one of the prizes.

Send at once to the following address for rules of the contest and helpful suggestions.

ELECTRIC REFRIGERATION BUREAU

Sponsored by

Edison Electric Institute
420 Lexington Avenue, New York City



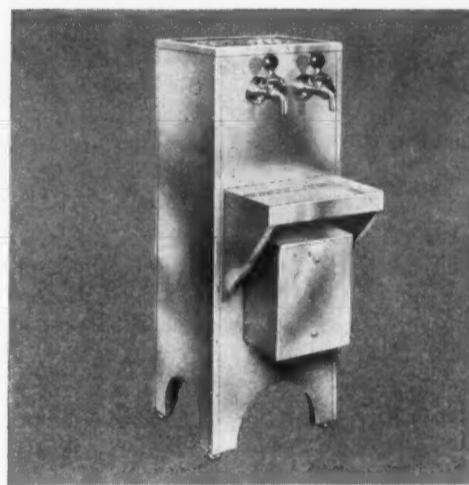
NEW

PROFIT OPPORTUNITY FOR FRIGIDAIRE DEALERS

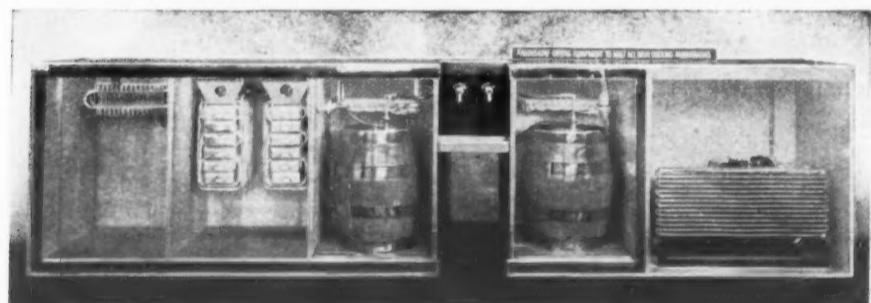
IN THIS COMPLETE LINE OF MODERN
BAR REFRIGERATION EQUIPMENT



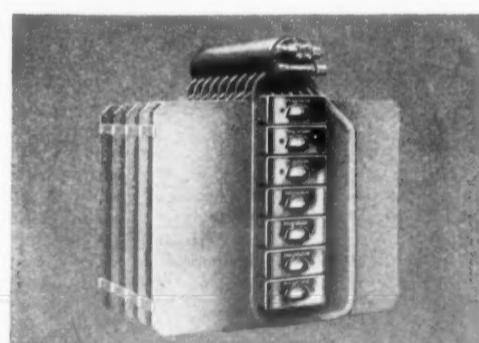
This is today's greatest bargain in a bottled beer cooler. Entirely automatic . . . with the famous Frigidaire Cold Control. It plugs easily into any electrical outlet.



This Frigidaire Draught Beer Cooler cools as much as 50 gallons of beer per hour from 50° to 40°. Speed of cooling depends upon type of compressor used. All types available.



Above photo shows modern bar completely equipped with Frigidaire. Equipment is made for large or small bars . . . new or old. Profit opportunities everywhere.



This shows one of the many Frigidaire ice-making coils for back bar installation. This model freezes 168 ice cubes at one freezing.

FOR OLD BARS
AND NEW . . . LARGE
ONES AND SMALL ONES . . .
YOU CAN SELL THEM ALL
WHEN YOU HANDLE

FRIGIDAIRE

BEER COOLERS
PRE-COOLING EQUIPMENT
ICE MAKERS
BACK BAR COOLING COILS
ALL GUARANTEED BY THE
WORLD'S LARGEST MAKER OF
ELECTRIC REFRIGERATION
EQUIPMENT

There's a real profit opportunity for dealers in Frigidaire's modern Bar Refrigeration Equipment. For the line is so complete that every dispenser is made a prospect. There is no job so large or so small but what a Frigidaire installation can be made that will exactly fill the bill. Thus no orders ever need be lost through any inability to give your prospects precisely what they need or want.

Made By Experts

Frigidaire is not a newcomer in the business. Long before beer became legal in America, we had installed Bar Cooling Equipment in practically every country in the world. Today Frigidaire is recognized the leader. For example; first prize of the Allied Arts Section of the American Beer Exposition held in Cleveland, Ohio, last September went to Frigidaire.

Furthermore, all Frigidaire Bar Equipment is priced right. That's another powerful lever when it comes to getting orders. No wonder Frigidaire Bar Equipment is so easy to sell!

Why not get the facts about this line of money-making equipment? There's no cost or obligation. Write for the facts today . . . Frigidaire Corporation, Subsidiary of General Motors Corporation, Dayton, Ohio.



FRIGIDAIRE

A GENERAL MOTORS VALUE

ELECTRIC REFRIGERATION NEWS

Registered U. S. Patent Office
Copyright, 1933, by Business News Pub. Co.

The Newspaper
of the Industry



Written to Be
Read on Arrival

Published Every Week by

BUSINESS NEWS PUBLISHING CO.

Also publishers of REFRIGERATED FOOD NEWS (monthly) and
REFRIGERATION DIRECTORY and MARKET DATA BOOK (annual)
550 Maccabee Building, Woodward Ave., and Putnam St.
Detroit, Michigan. Telephones: Columbia 4242-4243-4244-4245

Subscription Rates—U. S. and Possessions and all
countries in the Pan-American Postal Union: \$3.00 per year;
2 years for \$5.00. Canada: \$6.00 per year (due to special
tariff). All Other Countries: \$5.00 per year (U. S. Money)

F. M. COCKRELL, Publisher

GEORGE F. TAUBENECK, Editor
JOHN T. SCHAEFER, Engineering Editor
PHIL B. REDKEK, Assistant Editor
ELSTON D. HERRON, Staff Writer
A. J. CUTTING, Statistician

HOWARD W. MATHER, Advertising Manager
GEORGE N. CONDON, Business Manager
JOHN R. ADAMS, Production Manager

Member, Audit Bureau of Circulations
Member, Associated Business Papers
Member, Periodical Publishers Institute

EDITORIAL AIDS

To encourage the development of the art.
To promote ethical practices in the business.
To foster friendly relations throughout the industry.
To provide a clearing house for new methods and ideas.
To broadcast the technical, commercial, and personal
news of the field.

VOL. 10, NO. 9, SERIAL NO. 241, NOVEMBER 1, 1933

Commission Salesmen & the Retail Code

DISTRIBUTORS and dealers of electric refrigeration products will do well to study carefully the NRA code for retailers, pertinent excerpts from which were published on page 4 of the Oct. 25 issue of ELECTRIC REFRIGERATION NEWS.

It would seem from preliminary reading of this code that the free and liberal use of commission salesmen, long practiced by the industry's distributing organizations, may be curtailed by the code.

There is nothing in the code which appears to exempt salesmen working on a commission basis from the minimum wage provisions of the code.

Definitions in the Code

Section 4 of Article II in defining an "employee" declares that the "term 'employee' as used herein shall mean any person in the selling at retail of products not included within the definition of retail trade." This would not seem to have any bearing on the status of salesmen of refrigerators.

Section 5 of Article II defines an outside salesman as a "salesman who is engaged not less than sixty (60) per cent of his working hours outside the establishment or any branch thereof, by which he is employed."

Section 1 of Article VI declares that "on and after the effective date of this code, the minimum weekly rates of wages which shall be paid for a work week as specified in Article V—whether such wages are calculated upon an hourly, weekly, monthly, commission or any other basis—shall, except as hereinafter provided, be as follows:"

Minimum Wages for Salesmen

The same section also provides that "the minimum wages paid to professional persons, outside salesmen, watchmen . . . (in other words, those employees working unrestricted hours) shall be upon the basis of the basic employee work week upon which the establishment by which they are employed has elected to operate."

This means, in effect, that commission salesmen are to be paid a minimum wage ranging from \$10 to \$15 a week, depending upon the size of the locality in which the retailer is located and the number of hours he keeps open.

In an interpretation by Recovery Administration officials of the President's Reemployment Agreement, under which most retailers have been operating since Aug. 1, commission salesmen who

had been working for the same retailer previous to June 16, 1933, were exempted from the minimum wage provisions of the agreement, but if they were employed after that date they had to be guaranteed the minimum wage set forth for the retailer.

It is thought possible by some that the National Retail Trade Council, which will administer the new retail code, will accept this as a precedent in dealing with the problem of commission salesmen.

Manufacturers' Salesmen Exempted

Commission salesmen are specifically exempted from the minimum wage provisions of the Nema code for the electrical industry. Hence a manufacturer could go into a city and hire commission salesmen to sell his products; and if the salesman's commissions did not equal the minimum wage rate, the manufacturer would not be obligated to pay him the difference. It would appear, however, that if a salesman is on the payroll of a retail store, he must be paid (or given an equivalent drawing account) the minimum wage set by the code.

Cold Canvassing Handicapped

One probable result of minimum wages for "outside" salesmen will be a lessening of the number of doorbells rung each week, and a diminution of the use of the cold canvass.

For years the bigger dealers, and especially the master retail operations in metropolitan centers, have been taking on large crews of candidates periodically, giving them a training course, and turning them loose on the city's housewives. Working on a commission-only basis, but a few of each crew would survive. The remainder would drop out after a month or two, the dealer getting the benefit of their free canvassing services.

Under these new conditions the business of selecting new refrigeration salesmen must necessarily be less haphazard than before, and it is likely that retail sales managers will take chances on fewer new men.

New merchandising methods may come to the fore to supplant old ones which are made difficult under the NRA.

WHAT OTHERS SAY

A DIVIDED HOUSE CANNOT STAND

THE IRON AGE has been and is, a strong advocate of the essential principles of the President's Recovery Plan.

The criticisms that have been made in these columns have been for the purpose of helping the plan to succeed; not for the purpose of hindering it. They have been confined almost entirely to the application and interpretation of the highly controversial labor clause in Section 7, regarding which honest men may differ in opinion.

The Iron Age has no quarrel with collective bargaining. It is in favor of the payment of the highest possible wage rates and the shortest practical work week. And so too is the industry that *The Iron Age* represents.

In a sincere spirit of helpfulness to the NRA, we offer the following observations based on intimate contact with America's principal industry:

The President's plan, at its inception, met with the united support of employers in the metal-working industry. Today, our sources of information lead us to believe that many of these same employers have lost faith in it.

Regardless of the support of organized labor, which has always, politically, been a fair weather friend, a house divided against itself cannot stand. Any plan or policy which, on a broad scale, puts employers and employees at swords points is doomed to failure.

But aside from both employers and employees, there is another group which is the key to the recovery movement. This group comprises the American investors, large and small, and provides the capital for industry from its savings.

Uncle Sam's enormous pocketbook is not large enough to furnish the financial needs of industry. The private investor must do his part.

Private investors invest in management, not in physical assets such as bricks and machinery. They will not invest in management that is ham-strung through enforced subservience to labor union dictation. They will invest in initiative, ability, and efficiency; not in the activities of walking delegates, in union seniority rules, or in the check-off.

A vociferous minority of union officials has apparently convinced some of our people in power that the way to salvation lies in complete unionization of industry under the rule of the "old guard."

It will be a difficult matter to convince investors, employers, or the large majority of independent workers that national interests can be promoted by any such course.

Unless and until such impressions are corrected by official and definite pronouncements, we predict rough going for recovery.—*The Iron Age*, Oct. 26, 1933.

Lindsay Suggests Joint Manufacturers Laboratory Society for Rating Electric Refrigerators

By Harvey Lindsay, President, Dry-Zero Corp.

WHENEVER performance standards are mentioned, more than half of our electric refrigerator manufacturers step softly off-stage. To them, the establishment of standards for rating the quality of their merchandise smacks of interference.

It violates their conception of independence and offends their deep-rooted convictions regarding profitable methods of doing business. Such standards, it probably seems to them, place a premium on manufacturing skill and nullify the traditional advantages of smart selling and advertising.

Some manufacturers also feel that the establishment of performance standards is a Utopian project which would prove impractical under the irritating rub of intense competition. They fear, to be blunt, that there would be cheating, graft or unintentional prejudice. Rather than face these familiar risks in a new form, most of them prefer battling under the old rules.

Dealers Favor Standards

Refrigerator dealers feel differently about it. Of 157 dealers we questioned early this year, 137 favored the establishment of such standards, 9 were opposed and 11 did not respond to a questionnaire sent out by Dry-Zero.

I will not attempt to explain this reaction beyond pointing out that the dealers, apparently, are not worried by the pitfalls the manufacturers fear. No doubt, the dealers feel the establishment of such standards would benefit them, and they rely upon their manufacturers to see that the work is done on a fair basis.

NRA Consumer Board

Regardless of the conflicting opinions of dealers and makers on the value and practicability of establishing standards for rating refrigerators, the wind of popular demand is blowing in that direction. From the NRA Consumers' Advisory Board come hints dropped by Chairman Mary H. Rumsey and her associate, Stuart Chase. I quote Mrs. Rumsey:

"...the consumer is powerless to test the claims made by the manufacturer for his product. The government has agencies which test, weigh, and examine practically everything consumers use. The Consumers' Advisory Board believes that the Bureau of Standards, in particular, should be more utilized to supply the consumer with the services it is so eminently fitted to render."

I quote Mr. Chase:

"The NRA has rightly made increase of purchasing power its immediate objective; but as a long range concern—and one not to be overlooked even under present stress—the question of quality standards is of equal importance. It is my cherished hope that the government will become interested in using its existing bureaus as agencies for fact-reporting on standards in the interest of the buying public."

Standards for Refrigerators

Such straws mark the direction of the wind. On every hand standards of quality are being proposed for all kinds of merchandise. Therefore, it seems to me that leaders in the electric refrigeration field will be wise to begin considering ways and means of establishing such standards for their products.

The first problem, of course, is to determine what qualities these standards should embrace. Efficiency, durability and economy are the fundamental measures of the intrinsic worth of the electric refrigerator. Shall we set up standards for these three qualities only, or shall we include other items such as quality of finish, convenience and similar things? In my opinion, we had best stick to the three essentials since they will prove difficult enough to rate without complicating the picture with excessive detail.

Passing Data to Consumer

The second problem is how these ratings are to be passed on to the public. In the opinion of more than one manufacturer, this is an insurmountable obstacle.

Is one refrigerator to be ballyhooed as "most economical in the world" because the standard tests indicate it is 5 per cent less costly to run than its closest rival? Or is a refrigerator to be labeled "most efficient" because it maintains temperatures within 3 degrees of the ideal while the second best varies 4 degrees? Obviously not. No manufacturer will ever consent to such a system.

Grouped by Classes

With some diffidence, I offer a solution to this difficulty. Instead of releasing performance test data in exact figures, refrigerators can be classified by groups. Group A can include

those products which the tests indicate will provide the most efficient, the longest and most economical service.

Group B can cover those products shown by the tests to be adequate in each of the three qualities but not the equals of those in Group A. In Group C can fall those products having a yet lower rating, and so on for at least five groups.

Grade Each Refrigerator

Or, as an alternative, each refrigerator could be graded A, B, C, D, or E for each of the three items. Thus Refrigerator No. 1 might be graded A for efficiency, B for durability and A for economy, while Refrigerator No. 2 might be graded B for efficiency, A for durability and A for economy. Refrigerator No. 3 might be listed as A for efficiency, A for durability, and C for economy.

Either of these systems would prevent a manufacturer from capitalizing on minor superiorities. At the same time, it would permit positive identification of genuinely good refrigerators. Also, it would permit the prospect to make selection of the qualities he may desire most.

One customer might not be interested in rigid economy of operation while he might be primarily concerned with efficient food protection and long life. Another might be interested principally in economy of operation.

Fair Competitive Basis

A system of this type would place manufacturers on a fair competitive basis, and the industry on a stable foundation. The makers of the best refrigerators would be protected from the absurd claims of the manufacturers of less costly products, while the latter would still find a market for their type of merchandise. The public would acquire more confidence in the industry as a whole through such a plan than it will ever gain under the "claim everything" methods of the past.

This system would leave plenty of room for competitive selling. Style, convenience, and gadgets of one sort or another would remain sales factors just as they always have. The grading plan would tend to stabilize the industry's products within proper price ranges and reduce the recurrent menace of drastic price cutting and price fluctuation.

Such a system would also enable the dealer to build his business upon a firm foundation by selling only those refrigerators that will enable him to acquire a satisfied clientele, thus avoiding backfire from inferior or short-lived merchandise.

Who Will Do Testing?

The third problem in connection with the establishment of performance standards is even more vexing than the second. In private, it is the one cited oftenest as "the great stumbling block." This problem is: Who will set the standards and do the testing and rating?

If each manufacturer were allowed to choose his own laboratory, the system would become a commercial joke. To select a single laboratory for the work probably would be unwise, since certain makers would fear unintentional prejudice, if nothing more.

Cooperate with A.S.A.

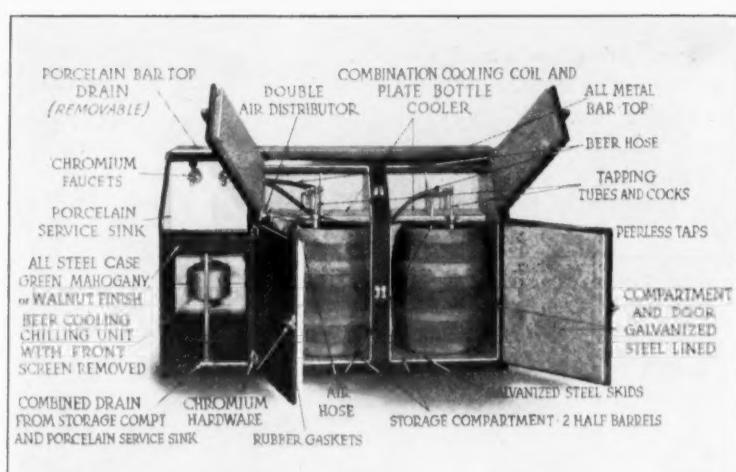
The logical solution of this difficulty, it seems to me, is for refrigerator manufacturers to cooperate with the American Standards Association, the United States Bureau of Standards, and a group of impeccable laboratory organizations to establish and standardize a competent test technique, so that such standardized tests, honestly run, will show, impartially, the intrinsic worth or grade of each product.

This work, so important to the stability of the industry, might well be conducted under the aegis of the A.S.A. Such a system would be entirely free from interference of business politics.

Basis for Development

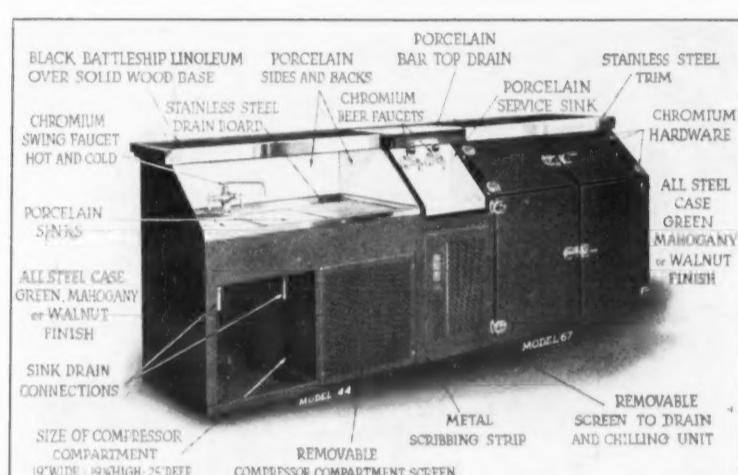
In presenting this thumbnail sketch of a method for establishing refrigerator ratings, I am attempting only to set up a basis for development. No doubt there are many flaws in the system I have outlined which may lead to numerous objections. But there is one objection to which I refuse to bow—the statement that the job cannot be done. It has been done by other industries.

Under the Electric Refrigeration Code, the manufacturers of electric refrigerators are set up in a manner that should permit them to work out the problem. At least, under present conditions, it would seem wise to lay the groundwork for such a move. Under the pressure of economic change, time flies fast.

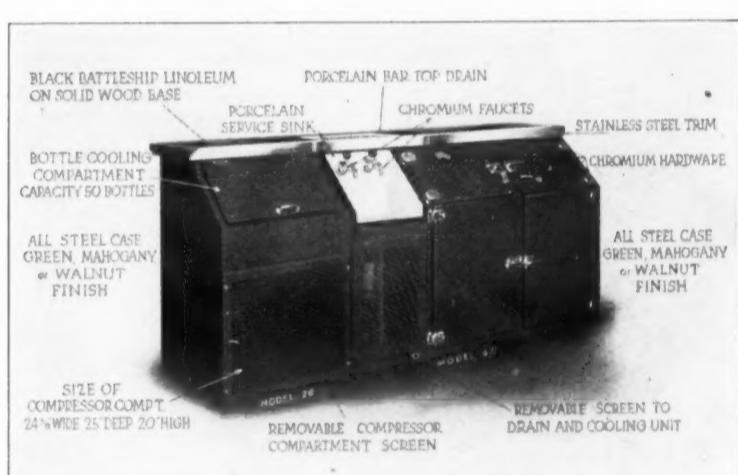


Model 67

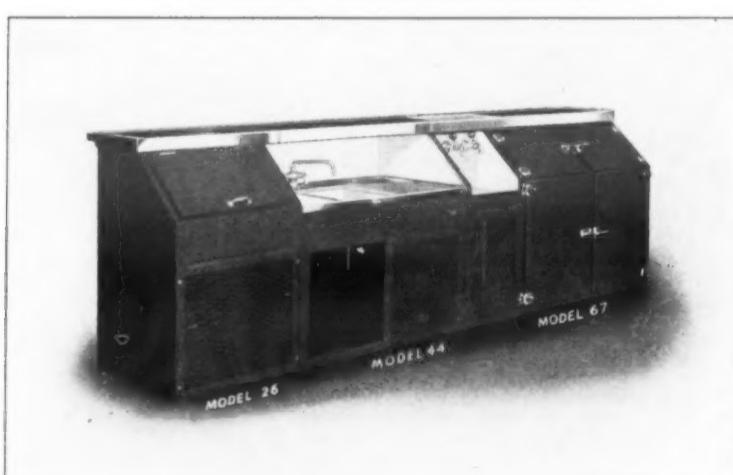
Seeger All Steel Novelty Cabinet with Beer Cooling Unit



Model 67-44

Seeger All Steel Novelty Cabinet with Beer Cooling Unit and
Seeger All Steel Service Sink

Model 67-26

Seeger All Steel Novelty Cabinet with Beer Cooling Unit and
Seeger All Steel Bottle Cooling Cabinet

Model 67-44-26

Seeger All Steel Novelty Cabinet with Beer Cooling Unit, Service Sink and Bottle Cooling Cabinet

Seeger

ELECTRIC BAR With TT-12-CC or ED-13 BEER COOLERS

Famous Seeger Beer Cooling and Servicing Equipment with ED-13 and TT-12-CC Beer Coolers providing a decided improvement over the former methods of handling beer and giving a drink neither too cold nor too warm —just the right temperature to protect the quality of the product.

ADVANTAGES

Super 67 Cabinets

All Steel

Fully Insulated

Rugged Construction

Durable

Tested and Approved

Convenient

Beautiful

Finished on all sides

Finished in Walnut or Mahogany grain or baked-on Olive Green enamel

TT-12-CC or ED-13

Assures beer at the right temperature

Properly cooled beer can be drawn within three minutes after cleaning

Easy to clean and to keep clean

Cleaning may be done with hot solutions or steam without disconnecting or disturbing the refrigeration system

Very compact—important wherever space is limited

The elimination of dampness prolongs life of fixtures and adds greatly to sanitation

The new Seeger Display Cases sold through Electric Refrigeration Dealers and Distributors are an added source of quick profits

Seeger

REFRIGERATOR COMPANY
SAINT PAUL, MINNESOTA

New York

Los Angeles

Chicago

Boston

Buffalo

Philadelphia

SERVICE

SUCTION LINE VALVE USED ON HUMIDRAFT

EVANSVILLE, Ind.—Application of a new suction pressure limiting valve to Servel Humidraft forced convection cooling units has just been announced by C. A. Miller, sales manager of Servel Sales, Inc., here. The new valve is a suction line control device which keeps the pressure within the cooling unit from being reduced below a predetermined point.

It is installed in the suction line beyond the point where the thermostatic expansion valve bulb is clamped to the tubing, and with the suction gas flowing in the direction of the arrow embossed on the body casting.

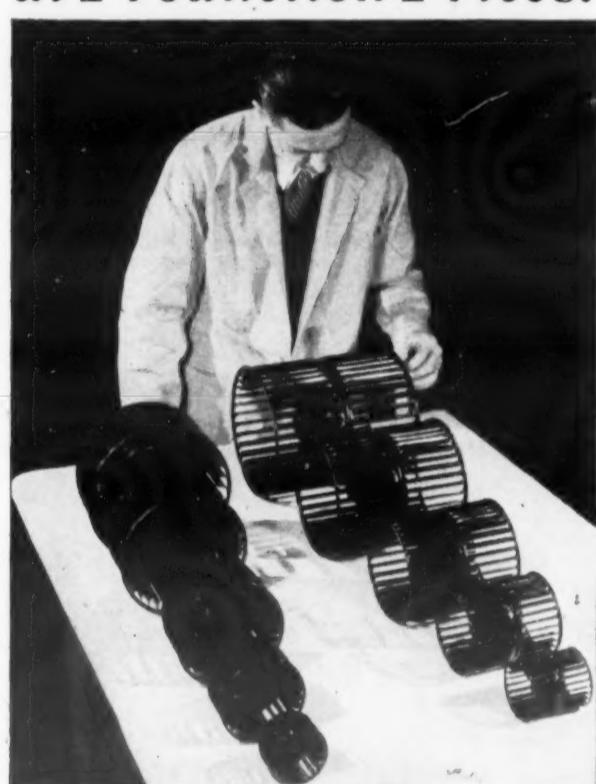
In his announcement, Mr. Miller says that it is good practice to install a three-way packless shut-off valve ahead of the valve to permit checking of the cooling unit pressure, and to facilitate accurate adjustments.

The valve is adjusted by a range adjustment screw which, if turned counter-clockwise, compresses the range spring and raises the point at which the valve will throttle. Relieving the tension of this spring lowers the throttling point of the valve.

The valve is particularly helpful on complex multiple hook-ups where the Humidraft represents only a small part of the refrigeration load. Mr. Miller points out, because it prevents pulling down the pressure (and temperature) of the unit too low.

If the valve on a Humidraft is set cent are maintained by the system.

PRESSED STEEL MULTI-BLADE WHEELS *at Production Prices!*



Immediate Delivery for Oil Burners, Driers, Air Conditioning Units, Etc.

Whether you want one or one thousand multi-blade wheels, the American Blower Corporation will care for your needs quickly and inexpensively.

A wide variety of combinations and types of wheels—ranging from a three inch diameter wheel to nine inches in diameter, with standard and reverse hubs, for clockwise or counter clockwise operation, in single and double widths—are carried in stock for immediate delivery.

Over fifty years' experience, quantity production methods and the finest equipment for the manufacture of multi-blade wheels for air handling enables us to produce these precision made wheels at unusually attractive prices.

Manufacturers are invited to correspond with us regarding wheels for oil burners, air conditioning units, driers, etc. There is no obligation. Address your inquiry to—Appliance Accessory Department.

AMERICAN BLOWER CORPORATION
6000 Russell Street • Detroit, Michigan
(1280)

American Blower
VENTILATING, HEATING, AIR CONDITIONING, DRYING, MECHANICAL DRAFT
MANUFACTURERS OF ALL TYPES OF AIR HANDLING EQUIPMENT SINCE 1884

Gas Masks Provide Protection Against High Concentrations of Refrigerant

By George Knoll, Chicago Manager, Mine Safety Appliances Co.

THE past 10 years have witnessed a considerable change in the refrigeration industry. Prior to this time it was largely confined to the manufacture of ice for home and industrial uses, for the preservation of foods, and the manufacture of food products. The development of mechanical refrigeration, air conditioning of homes, theaters, office and other buildings has greatly enlarged the field of refrigeration.

This is undoubtedly the beginning of an extension and development program which will in the not far distant future open up larger and more extensive fields for the industry.

Naturally, with the advent of these developments, new refrigerating gases other than ammonia have been developed and utilized. Generally they are not poisonous in low concentrations, but are irritating to the eyes, membranes of the throat and respiratory organs, so that one has ample warning of their presence.

Refrigerants which are not in themselves easily detectable, either by odor or other means, have warning agents added which are eye, nose, and throat irritants, and in very low concentrations (three to five parts per million) are intolerable to breathe. When released in confined areas the gases become concentrated and as a result present respiratory hazards against which protection must be provided.

The gases most generally used at this time and the effects of breathing various concentrations are as follows:

	PARTS PER MILLION OF AIR				
	Ammonia	Sulphur Dioxide	Methyl Chloride	Ethyl Chloride	Carbon Dioxide
Detectable	53	3	...	...	...
Irritating	408	8	...	...	...
Allowable for prolonged exposure	100	10	500	20,000	20,000
Allowable for short exposure, 1/2 hour	300	50	7,000	40,000	40,000
Dangerous, 1/2 hour	2,500	400	20,000	60,000	60,000
Rapidly fatal	5,000	...	150,000	150,000	300,000

Propane, Butane, Isobutane—Asphyxiant and slightly anesthetic.

Carbon dioxide is used quite extensively as a cooling agent. However, a person can breathe up to three or four per cent in air with no effects other than a marked increase in the depth of breathing. At five per cent breathing is further increased, and ten per cent cannot be endured for more than a few minutes. It is not dangerous excepting in concentrations producing a deficiency of oxygen, which condition is rarely if ever encountered.

As some of the gases within certain limits are explosive, if it is necessary or desirable to determine whether or not an oxygen deficient atmosphere is present, it is generally recommended that tests be made with the miner's flame safety lamp, which will give positive indication of this condition by the flame becoming extinguished.

Gas Mask Research in War

We owe much to the research on toxic gases and gas masks during the world war. In order that humanity might receive the greatest benefit from this work, considerable money was expended in time and further research to develop masks and make them available to industry.

Since their introduction to industry, steady progress has been made in developing them to a higher state of efficiency, and fortunately the work continues, so that today there is available a type that gives protection against all known industrial gases, either individually or in combination.

This research is of particular benefit to the refrigeration industry as the gases employed are of a type that can be adequately protected against through the use of gas masks which eliminate the necessity of providing more bulky and expensive equipment.

Don't Supply Oxygen

Gas masks should not be confused with self-contained oxygen breathing apparatus or hose masks which supply oxygen or fresh air to the wearer independently of the atmosphere surrounding him. The term gas mask is applied only to masks of the filter type, that is, masks equipped with canisters containing chemicals for removing the noxious gases from the air. Generally they are adapted for use in concentrations up to three per cent in air.

Various types of respiratory equipment have been used in the refrigeration industry, but the type which has proved the most practical is the mask consisting of a facepiece, connecting tube, canister, and canister harness.

The canister is filled with chemicals for removing the gases, and is the most vital part of the mask. It is obvious that some chemicals have a greater capacity for absorbing specific gases than others. For this reason canisters are manufactured for individual gases, such as ammonia or sulphur dioxide, and also for various combinations where more than one is likely to be encountered.

A standard of colors for canisters has been adopted, which in addition to their markings makes them easily dis-

*Paper presented before the National Safety Congress, Oct. 5, 1933, in Chicago.

ent upon the number of men to be exposed in the repair of the equipment.

The masks should be located in some readily accessible place outside of the room in which there is a possibility of the escape of gas. In service work all men who are exposed to gases should be provided with masks.

The occasion requiring the use of masks is usually one of emergency, and unless handled promptly and efficiently, may mean considerable loss in refrigerant and possibly damage to life and property.

The equipment is of no value whatsoever, unless it is maintained in first class condition, and the men are thoroughly familiar with its use. The masks should be inspected periodically, at least once a month, to see that rubber parts have not deteriorated, and that all connections are tight. The canister should be replaced once a year whether or not the mask has been used.

Quite often masks are used at such infrequent intervals that the men do not get sufficient experience in their use to make them proficient. The masks are so simple that intensive training is not necessary; however, too much emphasis cannot be placed on the importance of adequate training to thoroughly familiarize the men with the proper adjustment of the mask, testing for tightness, inspection and care.

It would be well spent if the engineer or employee who might be called upon to use masks would, about once a month, put it on and wear it while performing some work, in order to become accustomed to the feel of the mask.

Refrigeration gases and equipment are involved in fires occasionally, and here gases, fumes, and smoke produced from combustion are also present. An all-service gas mask which provides protection against all gases, smoke and fumes, including carbon monoxide, is used in a great many plants.



COOPERATING

We signed the NRA agreement. It is our pledge of cooperation in the battle to hasten national recovery.

Our cooperation does not end there, however. Automatic refrigerators using sulphur dioxide require a product that is pure, dry and uniform. We make it. It's called ANSUL SULPHUR DIOXIDE.

ANSUL CHEMICAL CO.
MARINETTE, WISCONSIN
makers of

ANSUL SULPHUR DIOXIDE



BY ANSUL

Sales and Deliveries Quickened with Larkin 3-Point Warehouse Service

Now Over 45,000 Larkin Coils in Daily Use

YOU can get LARKIN standard COILS in less than 24 hours to any point east of the Rockies as the result of complete stocks of 124 standard models and sizes available through Brooklyn and Chicago Warehouse arrangements.

This service, which was inaugurated a few months ago, is a decided selling aid to Manufacturers, Distributors and Dealers and keeps pace with growing demands for this great line. (Special size COILS for every purpose—only from Atlanta).

WAREHOUSES

Brooklyn - Chicago

NRA
WE DO OUR PART



ATLANTA, GA., U.S.A.
U.S. PATENT NO. 1,776,238

STANDARD FACTORY EQUIPMENT WITH

COPELAND : SERVEL : WILLIAMS ICE-MATIC : MAYFLOWER : UNIVERSAL : KULAIR : ZEROWE : M & E : MODERN : STARR : MOHAWK : DICELER : LIBERTY : H. M. Robins Co., Export and Others.

LARKIN
Refrigerating Corporation
Originator and Manufacturers



SERVICE NOTES

By K. M. Newcum

SEVERAL different theories have been advanced as to the correct method of clearing an oil-bound evaporator of the flooded type, using the lowside float and SO_2 as the refrigerant.

It is known that oil, being lighter than SO_2 , floats on top of the liquid in the evaporator at a predetermined level. The level is determined by the calibration of the float valve assembly, and the oil return opening in the suction return tube. Thus the amount of oil present in the evaporator is, in reality, the difference or space between the SO_2 liquid level and the oil return opening.

Assuming the evaporator to be level, the oil level should remain constant, for as additional oil is carried into the evaporator, with the liquid, the oil level is automatically raised, allowing any excessive oil to overflow and return to the crankcase of the compressor.

Float Out of Calibration

Why then should there be any danger of the evaporator becoming oil-bound? There can be only one fundamental reason why excessive oil should accumulate in the evaporator; this is an improperly calibrated float valve assembly. A float valve that is calibrated so that it maintains a low liquid level thus increases the thickness of the oil blanket over the liquid.

Should this blanket of oil become excessive, it will retard the vaporizing action of the liquid to such an extent that poor refrigeration will result. The suction pressure at the compressor will indicate the low side pressure above the oil blanket, but not the actual saturated vapor pressure, which is being trapped or retarded by the heavy blanket of oil.

When this condition exists the evaporator may frost unevenly or spasmodically. Dull thumping noises will be heard in the evaporator at irregular intervals during the running cycle of the compressor. The gauge will register an uneven back pressure.

The thumping noise is the saturated vapor breaking through the heavy oil blanket, throwing slugs of oil against the sides or top of the boiler. This sudden rush of vapor momentarily increases the operating back pressure, as indicated on the compound gauge.

To clear an oil-bound evaporator heat may be applied to the tubes with a blow torch, or the ice trays filled with hot water and placed in the tray sleeves. This additional heat will cause the liquid to boil violently breaking through the oil blanket. The amount of oil that may be expelled from the evaporator by this method is uncertain, and may only give temporary results as the cause of the condition has not been corrected.

Another method commonly used is adding liquid refrigerant to the cold evaporator, through the suction line. The liquid or saturated vapor will travel up the suction line to the cold coil where it will condense.

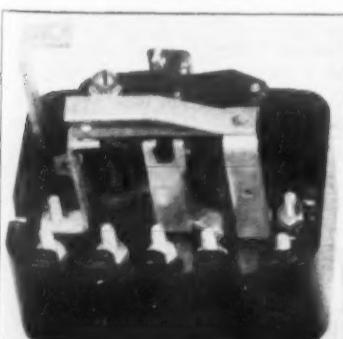
By the addition of one or two pounds the liquid level will have been raised, consequently raising the oil level above the over flow, at which

ACCELERATING RELAY FOR MOTORS DESIGNED BY G-E

SCHENECTADY, N. Y.—General Electric Co. has developed a double-coil accelerating relay with one contact for resistance-split or capacitor-start motors, and a modification with two contacts for capacitor-start and run motors.

This double-coil relay has the ability to change from starting to running position at practically the same speed under varying voltage conditions. The relay is provided with a number of connection studs so that cables for line, capacitor, light switch, light, and motor

For Starting Motors

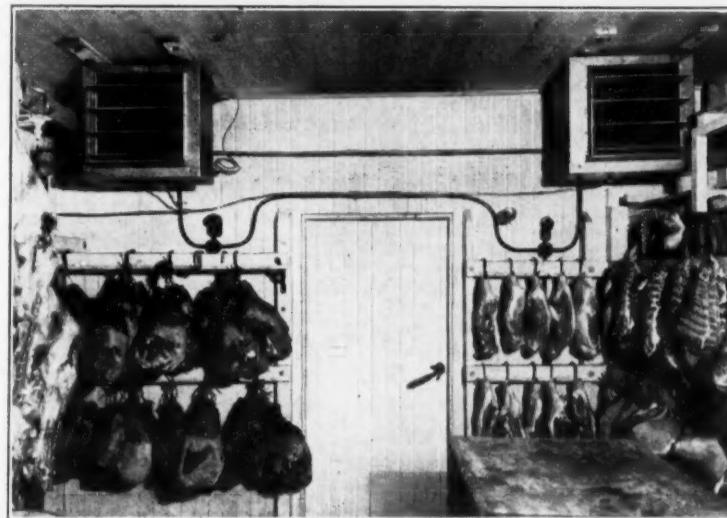


New G-E Accelerating Relay.

can be brought into the relay, eliminating the necessity of splices, special cables, and junction boxes.

Where torque requirements are such that a single-coil type relay will give satisfactory service, a noiseless relay can be supplied for resistance-split or capacitor-start motors.

Forced Draft Cooling of Meat



Two of Larkin's new Humi-temp forced convection coolers installed with a 2-hp. Universal Cooler machine in a Grand Rapids meat market.

UNIVERSAL & LARKIN EQUIP MEAT MARKET

(See Illustration at Left)

GRAND RAPIDS, Mich.—Two Larkin Humi-temp forced draft cooling units, operating from a Universal Cooler W2003 2-hp. 3-cylinder condensing unit, have been installed in the storage cooler of the 334 W. Bridge St. store of the DeVries and Lugers meat markets here.

The installation was made by Boot & Co., distributor for Universal Cooler commercial refrigerating equipment.

The 2-hp. Universal condensing unit is also handling 30-ft. of refrigerated display counter.

The Larkin forced-draft units are installed in a 14x14-ft. cooler and replace an ammonia system in which pipe coils were used. A false ceiling was built to allow for the installation of the units, which consist of fan coils and louvers. The units are installed at the door end of the cooler.

Each unit's fan motor is equipped with a three-speed switch, the fans operating on an economizing cycle by means of a Penn type "L" pressure control.



You can't sell goods from FLUTTERING PAGES

Every advertising man will agree to that. You require a newspaper that is conscientiously and steadily READ . . . not "glanced through."

That is why it is so vitally important to recognize the fact that the JOURNAL is New York's BEST READ evening newspaper . . . and that it is read in about a quarter of a million more homes than any other evening paper in New York. It is these two points which give the JOURNAL its year-in, year-out superiority in the sale of electric refrigerators and all kindred appliances.

NEW YORK JOURNAL

New York's BEST READ, and therefore,
most INFLUENTIAL evening paper

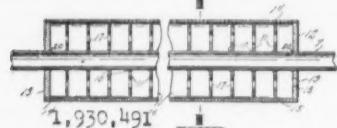
NATIONALLY REPRESENTED BY RODNEY E. BOONE ORGANIZATION

PATENTS

ISSUED OCT. 17, 1933

1,930,491. REFRIGERATION EVAPORATION. Dent Sandford, Toledo, Ohio. Application May 21, 1930. Serial No. 454,267. 2 Claims. (Cl. 62—95.)

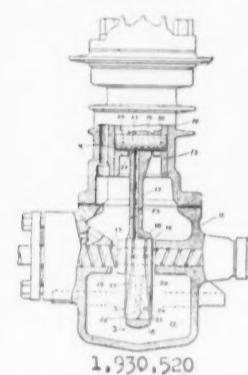
1. A refrigeration installation embodying a duct for a cooling medium, said duct having perforate disk fins integral there-



with, and a jacket about and having clearance as to the fins providing a brine chamber about the duct.

1,930,520. REFRIGERATING APPARATUS. Daniel L. Kaufman, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a corporation of Delaware. Application Oct. 9, 1929. Serial No. 398,440. 8 Claims. (Cl. 184—13.)

1. A compressor having a casing, an operating shaft in said casing, an eccentric on said shaft, a piston in said casing,



connections between said eccentric and said piston, a portion of said casing adapted to act as an oil reservoir, said eccentric adapted to revolve in said oil

reservoir, said eccentric having a groove therein for picking up said oil and said connections having passageways therethrough for directing said oil to said piston.

1,930,569. ICE MAKING APPARATUS. William H. Taylor, Milwaukee, Wis., assignor to The Vilter Mfg. Co., Milwaukee, Wis., a corporation of Wisconsin. Application Oct. 13, 1930. Serial No. 488,295. Renewed Jan. 16, 1932. 20 Claims. (Cl. 62—108.)

1. Ice making apparatus comprising, a casing having a wall provided with internal annular grooves the surfaces of which are maintained at freezing temperature, an ice-film removing member movable within said casing along and in close proximity to said groove surfaces, and means for circulating liquid through said casing in sufficient quantity to maintain said surfaces in flooded condition and to effect constant discharge of the removed ice films with the excess liquid.

1,930,570. ICE MACHINE. William H. Taylor, Milwaukee, Wis., assignor to The Vilter Mfg. Co., Milwaukee, Wis., a corporation of Wisconsin. Application Jan. 23, 1932. Serial No. 588,261. 20 Claims. (Cl. 62—106.)

1. In an ice machine, a casing having a wall provided with internal annular tapered grooves the surfaces of which are maintained at freezing temperature, an ice-film removing member having tapered projections movable along and in close proximity to said groove surfaces, and means for circulating liquid along and across said grooves.

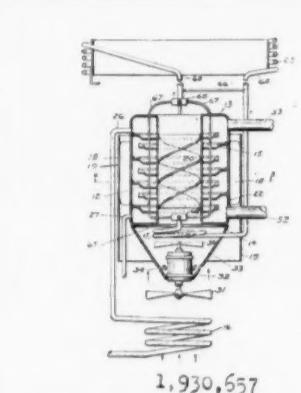
1,930,656. SHELF SUPPORT. Alfred Edgar Nave, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application Aug. 10, 1932. Serial No. 628,149. 4 Claims. (Cl. 248—18.)

1. The combination of a plate having spaced slots, a shelf support comprising a cup having a bayonet slot for interlocking engagement with said plate upon insertion of a portion of a cup through the plate and relative rotation of the same, a washer associated with said cup, a gasket disposed around the cup and in engagement with the washer and adapted to be clamped by the washer against the plate and a shelf supporting shank associated with said cup and washer.

1,930,657. AIR COOLED ABSORBER FOR REFRIGERATING SYSTEMS. Rudolph S. Nelson, Rockford, Ill., assignor to The Hoover Co., North Canton, Ohio, a corporation of Ohio. Application May 7, 1932. Serial No. 609,791. 6 Claims. (Cl. 62—119.5.)

1. An arrangement for air cooling an absorber vessel of a refrigerating system having a flue through a portion thereof which includes a fan located below the

absorber for directing air through the flue, an indirect cooling system having fluid conduits passing through the interior of said vessel and means outside said vessel for providing a closed circuit for the fluid in said conduits and having a heat radiating element disposed in the path or the air currents set up by said fan.



1,930,657

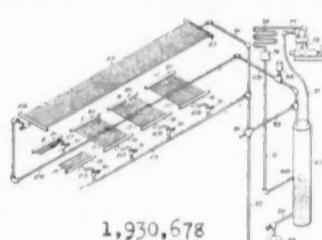
absorber for directing air through the flue, an indirect cooling system having fluid conduits passing through the interior of said vessel and means outside said vessel for providing a closed circuit for the fluid in said conduits and having a heat radiating element disposed in the path or the air currents set up by said fan.

1,930,671. ABSORPTION REFRIGERATING APPARATUS. Edmund Altenkirch, Neuenhagen, near Berlin, Germany, assignor, by means assignments, to The Hoover Company, North Canton, Ohio, a corporation of Ohio. Application Jan. 5, 1929. Serial No. 330,530, and in Germany Jan. 14, 1928. 6 Claims. (Cl. 62—119.5.)

In an absorption refrigerating apparatus of the continuously operable type, in combination, a boiler, condenser, an evaporator and an absorber containing an absorption solution and a partly condensed and partly gaseous working medium, and also containing an inert gas admixed with the gaseous working medium in the absorber and the evaporator, connecting pipes between said absorber and said evaporator for permitting a circulation of the mixture of gaseous working medium and the inert gas, a connecting pipe between said condenser and said evaporator for conveying the condensed working medium into the evaporator, said last-named pipe running through at least a portion of said evaporator in which it is exposed to the cold generated therein, and terminating at the upper evaporator end near the admission point of the gas pipe a conducting inert gas from the absorber to the evaporator, for cooling the condensed working medium by the low temperatures produced in the evaporator before it is discharged into the evaporator, whereby a zone of extremely low temperature is produced in the evaporator portion adjacent to the entrance point of the working medium and of the inert gas.

1,930,678. REFRIGERATING METHOD AND APPARATUS. Franklin T. Harding, Arlington, Mass., assignor, by means assignments, to Frostee Foods Co., Inc., Dover, Del., a corporation of Delaware. Application May 27, 1929. Serial No. 366,196. 15 Claims. (Cl. 62—104.)

14. Refrigerating apparatus including an overhead refrigerating member having connections for receiving a refrigerating me-



1,930,678

dium and presenting a refrigerating surface, a series of carriers having flat product-supporting faces each being in area a fraction of the area of the surface of said overhead member, and mechanism associated with each carrier section for lifting the same to engage the product supported thereon against the surface of said overhead member while other carriers remain in lowered position.

1,930,731. METHOD AND APPARATUS

FOR TRANSFERRING LIQUID MATERIAL. Harold E. Thompson, Hastings-on-Hudson, N. Y., assignor to The Linde Air Products Co., New York, N. Y., a corporation of Ohio. Application Dec. 14, 1932. Serial No. 674,188. 19 Claims. (Cl. 62—1.)

1. The method of transferring liquid material, volatile at normal atmospheric pressure and temperature, from a source of supply at a relatively low pressure to a receiver at a relatively high pressure, which comprises causing a flow of liquid from said source to said receiver, and during said flow elevating the pressure to the desired value in a plurality of stages, in the first of which an intermediate pressure is attained sufficient to avoid flashing into vapor under suction and in the remainder of the stages attaining the desired pressure value compressibly.

1,930,773. SHELF FOR REFRIGERATORS, SHOW CASES, AND THE LIKE. John E. Saum, Dayton, Ohio, assignor to Trupar Manufacturing Co., Dayton, Ohio, a corporation of Ohio. Application Jan. 7, 1931. Serial No. 507,207. 3 Claims. (Cl. 211—153.)

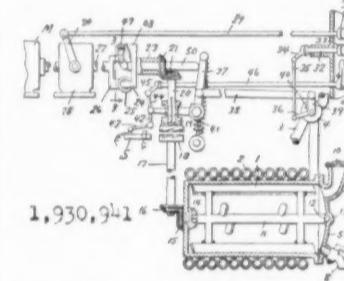
1. A shelf of the type described, comprising a rectangular wire frame, fixed ribs connected between two opposite sides thereof, said sides projecting beyond an outer rib, and a frame section removably supported at its ends upon the extended portions of said sides for the purpose specified.

1,930,794. VENTILATING FAN. Ernest B. Freeman, Newton, Mass., assignor to B. F. Sturtevant Co., Hyde Park, Mass., a corporation of Massachusetts. Application July 9, 1928. Serial No. 291,216. 4 Claims. (Cl. 230—273.)

4. A fan comprising a fixed support provided with diametrically opposite bearings, a swinging casing having bearing members mounted in the bearings for rotational and longitudinal movement thereof, devices for normally holding the members and casing at the limits of their rotational movement, the members and casing having provision for limited longitudinal movement to release them from the said devices to permit rotational movement thereof, and a motor and fan carried by the casing.

1,930,941. ICE CREAM ATTACHMENT AND MIXER FOR MECHANICAL REFRIGERATORS. Lowell G. Modlin, Huntington, W. Va. Application June 14, 1932. Serial No. 617,188. 3 Claims. (Cl. 62—116.)

1. In combination with a mechanical refrigerator, a container supported therein, a conduit for supplying refrigerant to the



means submerged in said liquid adjacent the lowermost part of the evaporator for initiating the formation of refrigerant vapor below the liquid level therein, said means comprising a substance of vegetable organic nature having a capillary surface, and said means being so formed and arranged as to allow free passage of liberated vapor to the vapor space in the evaporator.

(Continued in Next Issue)

PATENTS

Searches, Reports, Opinions by a Specialist in REFRIGERATION
H. R. VAN DEVENTER
Solicitor of Patents - Refrigeration Engineer
342 MADISON AVE. NEW YORK

WE ARE BUILDERS OF
QUALITY
REFRIGERATOR CABINETS
SEND US YOUR SPECIFICATIONS
ERIE ART METAL CO.
ERIE, PA.

Testing Service
for Domestic and Commercial
Electric Refrigeration

Testing and experimental laboratory service for Manufacturer, Distributor, Central Station. Test data exclusive property of client.

Electrical
Testing Laboratories
80th St. & East End Ave.
New York

**Fulco Adjustable
REFRIGERATOR
COVERS**

Fit any size refrigerator. Big saving over old styles. Easy to adjust—more convenient. Made of strong, durable green cloth, flannel lining and non-lump filler. Write for prices today.

Fulton Bag & Cotton Mills
ATLANTA, GA. BIRMINGHAM, ALA.
ST. LOUIS, MO. NEW YORK, N.Y.
PHILADELPHIA, PA. CHICAGO, ILL.
DETROIT, MI. BOSTON, MASS.
WILMINGTON, DELA. BIRMINGHAM, ALA.

Quiet and Dependable

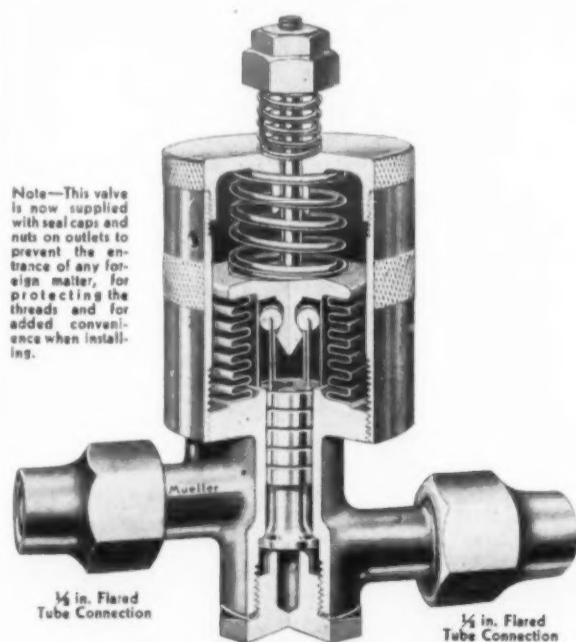
The special flexible mounting that characterizes the Leland design recommended for refrigerator compressor drive partially explains why the Leland is so unusually quiet in operation—why there can be no noise—no transmission of vibration—no radio interference. Get one for test.

The Leland Electric Co., Dayton, Ohio, U.S.A.
Canadian Address
Toronto

Leland Motors

1,930,731. METHOD AND APPARATUS

A Two-Temperature Control Valve That Will Maintain the Range in Temperature You Require for Refrigerator and Display Case or Cooling Cabinet



Note—This valve is now supplied with seal caps and nuts on outlets to prevent entrance of any foreign matter, for protecting the threads and for added convenience when installing.

1/4 in. Flared
Tube Connection

A-11095

This valve is so constructed that by merely turning the outside knurled case a service man can raise or lower the temperature without danger of losing the differential which has been previously set.

The differential is built into the valve and cannot be changed.

The temperature range may be changed without the necessity of a recheck or numerous visits of the service man.

Simplicity of construction insures a long and trouble proof service.

The snap action feature prevents seat erosion and assures uniform performance.

The body is a brass forging and is therefore seep proof and free from defects.

NOTE—When Ordering Specify "Cut-In" and "Cut-Out" Readings

Mueller Brass Co.

PORT HURON, MICHIGAN

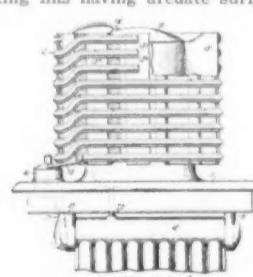
Mueller Brass Co. Valves and Fittings are approved by the Underwriters' Laboratories of Chicago

We manufacture a complete line of valves and fittings and can supply your every requirement

tending circumferentially thereof, and a conduit secured theron, said conduit having a flat side in contact with said arcuate surfaces.

1,931,154. REFRIGERATOR CONDENSER. Delbert F. Newman, Schenectady, N. Y., assignor to General Electric Co., a corporation of New York. Application April 28, 1933. Serial No. 668,397. 5 Claims. (Cl. 257—36.)

1. An air cooled condenser for refrigerating systems including an annulus of heat radiating fins having arcuate surfaces ex-



1,931,154

tending circumferentially thereof, and a conduit secured theron, said conduit having a flat side in contact with said arcuate surfaces.

1,931,198. COMPRESSOR DISCHARGE VALVE. John L. Klabon, Detroit, Mich., assignor to Norge Corp., Detroit, Mich., a corporation of Michigan. Application Nov. 26, 1930. Serial No. 498,219. 3 Claims. (Cl. 230—149.)

1. A discharge valve of the elongated strip type pinned at one end and adapted to control a valve seat in the outlet passage of a pump having a compression

BUYER'S GUIDE**ALWAYS IMPROVING**

There are no "yearly models" in PEERLESS FIN COILS. As experience dictates the PEERLESS FIN COIL is being constantly improved.

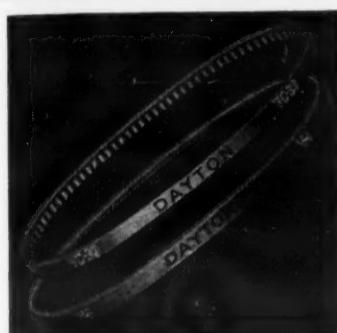
NO SOLDERED RETURN BENDS

The first fin coil to eliminate the soldered return bend with its trail of corroded and leaking joints, the PEERLESS now eliminates the soldered reducing nipple on the inlet and outlet connections of the coil. The $\frac{3}{8}$ " tubing of the fin coil is itself reduced to $\frac{1}{2}$ ".

NO JOINT—NO SOLDER—NO REDUCING FITTINGS

When you standardize on PEERLESS FIN COILS, you are always assured of an up-to-the-minute product.

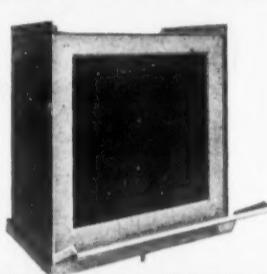
PEERLESS ICE MACHINE CO., 515 W. 35th St., Chicago, Ill.

**Dayton V-Belts**

For all makes and types of refrigerators. There is a stock near you. Ask for price list and name of your nearest distributor.

THE DAYTON RUBBER MFG. CO.
Dayton, Ohio

The World's Largest Manufacturer of V-Belts

KRAMER TURBOFIN UNIT COOLER

All copper construction, or copper fin steel tube for ammonia systems. Made in five sizes, ranging from 20 to 80 lbs. hourly I.M.E. Housing of sheet brass construction.

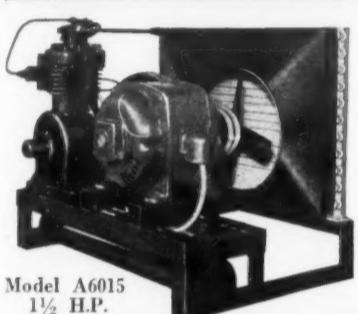
Also COMMERCIAL EVAPORATORS for all Refrigerators, DOMESTIC EVAPORATORS, CONDENSERS, SHELF COILS with fins or bare.

TRENTON AUTO RADIATOR WORKS

241 West 68th St. Trenton, N. J. 5145 Liberty Ave., Pittsburgh, Pa.

PARKER MANUFACTURING CO.**REFRIGERATION UNITS—1-6 to 5 H.P.****AMMONIA-METHYL SO₂-FREON****DEALERS WANTED****FACTORY**

2625 Santa Fe Ave., Los Angeles, Calif.



Model A6015
1½ H.P.

THE TRADEMARK OF FOUR PACE SETTERS IN COIL EFFICIENCY

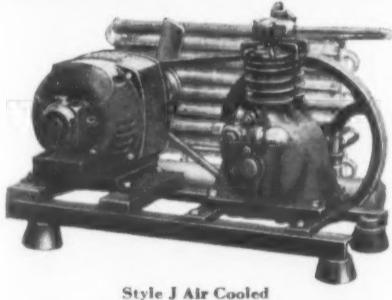
RACKS
KOILS
KOOL
C

SUR-E-FEX
FAN-E-FEX
HUM-E-FEX
SAN-E-FEX

Fin Coils
Diffusing Units
Non-Dehydrating Coils
Air-Conditioning Units

SEND FOR NEW CATALOG DESCRIBING THESE SENSATIONAL DEVELOPMENTS

REFRIGERATION APPLIANCES, INC.
H. J. KRACKOWIZER, Pres.
1342 WEST LAKE ST., CHICAGO

**STARR FREEZE CONDENSING UNITS**

47 Models with capacities from 49 to 2868 pounds I. M. E. present unique values and opportunities

Write for full data on STARR FREEZE commercial and household lines

THE STARR COMPANY
Cable RICHMOND, INDIANA Since 1927
"Starr"

DETROIT LUBRICATOR COMPANY

TRUMBULL, LINCOLN,
MARQUETTE & VIADUCT
DETROIT, MICH.

Manufacturers of "Genuine Detroit" Automatic and Thermostatic Expansion Valves, American Cube-makers, American Refrigeration Sections, Automatic Controls for Temperature and Pressure, Electric Valves for Refrigerant and Water Control, Thermostats, Humidistats and complete controls for Air Conditioning.

Descriptive literature gladly sent upon request

Division of
AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

How to Get a Free Copy of the BEER COOLING DIRECTORY AND HANDBOOK

Send \$1.00 for a 17-weeks trial subscription to ELECTRIC REFRIGERATION NEWS with this coupon and you will receive a free copy of the new 112-page BEER COOLING DIRECTORY AND HANDBOOK. Address Business News Publishing Co., 550 Macabees Bldg., Detroit, Mich.

QUESTIONS

Sorb-Senior Air Conditioner
No. 1410—"Who manufactures the 'Sorb-Senior' air conditioner?"

Answer—It's a new one to us. Has anybody else information about it?

Door Gaskets

No. 1411 (New York)—"Kindly advise us names and addresses of companies making gaskets for doors of household refrigerators."

Answer—Aetna Rubber Co.

4710 State Road, Ashtabula, Ohio.

Jarrow Products Corp.

142 W. Austin Ave., Chicago, Ill.

Kason Hardware Corp.

61 Navy St., Brooklyn, N. Y.

Miller Rubber Products Co.

South High St., Akron, Ohio.

R. H. Schwartz Rubber Corp.

3708 Payne Ave., Cleveland, Ohio.

Wirs Corp.

106 S. 17th St., St. Louis, Mo.

Kerosene Operated Refrigerators

No. 1412 (Distributor, Nebraska)—"Can you furnish us with names of manufacturers making refrigerators to operate on kerosene?"

Answer—Just two companies make kerosene-operated refrigerators: Gibson Electric Refrigerator Corp., Greenville, Mich., and Perfection Stove Co., 7609 Platt Ave., Cleveland, Ohio.

Information on F-12

No. 1413 (Manufacturer, England)—"Have you any information available on the technical properties of the new refrigerant Freon, developed by Frigidaire?"

Answer—Physiological properties of this refrigerant were given in the Dec. 30, 1931, issue of ELECTRIC REFRIGERATION NEWS. Design factors were presented in the Nov. 30, 1932 issue.

Parts and Machines for Export

No. 1414 (New York)—"We are interested in purchasing the important unit parts of household electric refrigerators for export to our distributors in Europe."

Answer—See the classified lists of parts manufacturers in the REFRIGERATION DIRECTORY AND MARKET DATA BOOK.

Sparklets' Address

No. 1415 (Distributor, New York)—"Please advise where we can purchase the small charging tubes for charging two quarts of water. These are made in England, we believe, and cost about 5 cents each, 12 in a box."

Answer—These are reported to be available from Sparklets, Ltd., Angel Road, London, N. 18, England.

Refrigerated Truck Bodies

No. 1416 (Manufacturer, New York)—"We will be much obliged if you can furnish us with a list of manufacturers of refrigerated motor truck bodies, or if you can tell us where such a list is obtainable."

Answer—All known manufacturers of complete refrigerated trucks, refrigerated truck bodies only, and component parts of refrigerated trucks are listed on page 5 of the August issue of REFRIGERATED FOOD NEWS.

Socold Parts

No. 1417 (Consumer, Wisconsin)—"We have in our home a refrigerator called the 'Socold,' and are unable to locate the manufacturer of this machine to get replacement parts. We are advised that you can tell us where to get parts for this machine."

Answer—The manufacturer of this refrigerator has been out of business for several years. For replacement parts, try C. E. Porter, 17 Stewart St., Lynn, Mass.

George Licence

No. 1418 (Manufacturer, Wisconsin)—"We note from your Oct. 18 issue that George Licence has resigned from the service management of Copeland to start work with Stewart-Warner Corp. Will you be good enough to advise whether he will be located in Chicago or Detroit?"

Answer—Beginning today (Nov. 1) he will be located at Stewart-Warner headquarters in Chicago.

Service Manual

No. 1419 (Illinois)—"I would like to purchase a good handbook for refrigeration service men. Where can I buy one, and what will it cost?"

Answer—There is only one book of that nature on the open market—the "Official Refrigeration Service Manual" published by Gernsback Publications, Inc., 96 Park Place, New York, N. Y. Price per copy is \$5.

Refrigerant Chart

No. 1420 (Belgium)—"In the Sept. 23 issue of the News we read about Mr. A. A. McCormack's refrigerant chart for determining pressure-temperature relationships of various gases. Can you give us Mr. McCormack's address so that we can buy one of these?"

Answer—2305 Emerson Ave., Dayton, Ohio.

LEAGUE CONVENTION OPENED BY HARRISON

NEWARK—Led by Philip H. Harrison, northern New Jersey General Electric distributor and president of the Essex Electrical League, the second annual convention of delegates from the six electrical leagues of New Jersey was held at the Newark Athletic club Oct. 12.

Opening event was the monthly luncheon of the Essex Electrical League at which convention delegates were guests.

First session of the conference was opened by Mr. Harrison. He called attention to the importance of the electrical industry in New Jersey and the state's potential market for electrical appliances.

Sale of 10 per cent of this potential market, he said, would put approximately 10,000 additional people to work and would be a tremendous factor in solving the state unemployment problem.

New Jersey, he said, has the highest percentage of wired homes of any state in the Union in proportion to its population, and added that it is the only state which enjoyed an appreciable increase in power sales in 1932 over 1931.

In closing, he emphasized the importance of league organization to facilitate the industry's coordination of activities under codes provided for each individual group in the industry.

Robert Beller of the Beller Electric Supply Co., Newark; Arthur W. Lunn of the General Electric Co.; and John Caffrey, Jr., of Buhl & Caffrey, Newark, spoke on the NRA from the jobber's, manufacturer's, and contractor's standpoints.

Other speakers were: H. P. Litchfield, president of the New Jersey Council of Electrical Leagues; H. P. J. Steinmetz, general sales manager of Public Service Electric & Gas Co., Newark; Samuel Hibben of the Bloomfield plant of the Westinghouse Lamp Co.; Mildred Nichols, home economist of the New York Graybar Electric Co.

Ada Bessie Swann, director of the home economics bureau of Public Service Corp., Newark; B. A. Seiple, commercial manager of Jersey Central Power & Light Co., Asbury Park; James A. Smith, National Board of Fire Underwriters, New York City; and F. D. Pemberton, assistant general sales manager of Public Service Corp.

REFRIGERATION Mechanics, and Students. Blue Prints showing a variety of up-to-date commercial installations. Prints are easily read and all details are clearly shown. Explanatory text with each print. Write for descriptive folder. Box 594.

CLASSIFIED

PAYMENT in advance is required for advertising in this column.

RATES: Fifty words or less, one insertion \$2.00, additional words four cents each. Three insertions \$5.00, additional words ten cents each.

POSITIONS WANTED

REFRIGERATION Service Man. Can repair any kind of electric refrigeration machine. College graduate in industrial-management engineering. Trained in electric refrigeration classroom theory and by practical laboratory experience. My field experience has been unlimited. Have tools and car. Single, age 25. Address Harry Miller, 2250 South Wabash, Chicago, Ill.

QUOTATIONS WANTED

DEVELOPERS of new sealed compressors, with orders available, desire quotations from well-equipped plant having ample machining, assembling, drying and testing facilities—not necessarily including cabinet building. Box 597. Electric Refrigeration News.

EQUIPMENT FOR SALE

FOR SALE—Sacrifice. Your own price. 1100 brand new Mueller intake and discharge brass valves. Box 598. Electric Refrigeration News.

INDEPENDENT SERVICE COMPANIES
HALETRIC Thermostat repair service, Ranco, B & B. Two dollars each, one year guarantee, prompt service. Haletric Laboratory, 1793 Lakeview Road, Cleveland, Ohio.

MISCELLANEOUS

A LARGE Wholesale Jobber all makes repossessed refrigerators desires to make contact with distributors throughout the United States. Profits large, investment small. Lifetime opportunity to service men, hardware stores, radio stores, furniture stores and refrigerator dealers as a drawing card for increased business. Box 594.

REFRIGERATION Mechanics, and Students. Blue Prints showing a variety of up-to-date commercial installations. Prints are easily read and all details are clearly shown. Explanatory text with each print. Write for descriptive folder. Box 594.

AN ENGINEER has a line of patented specialties in domestic Evaporators, finned commercial Evaporator coils, bottle beer coolers, plate coils, etc., and desires to communicate with manufacturers seeking new articles to make, equipped and financed to produce and market same on some equitable basis. Efficiency with low cost of production of units has been carefully worked out and will compare favorably with others on market. Box 599.

Trained Men Available

When in need of practical, trained shop mechanics, installation or service men, patronize this FREE Placement Bureau. We have competent, trained graduates available in every locality, to meet your requirements. With or without experience. No charge to the men or to you. Write, phone or wire.

Utilities Engineering Institute

Placement Division

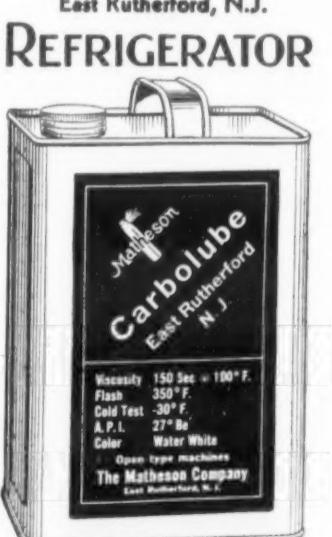
Wells at Kinsie Street, Chicago

Purest Sulphur Dioxide EXTRA DRY ESOTOOL

VIRGINIA SMELTING Co.
WEST NORFOLK, VA.
75 WEST ST. N.Y. 151 STATE ST. BOSTON

How to save money on Motor, Transmission, Crank, Eccentric and Compressor Shafts. Send us your blue prints, we will send you our prices. Write today. MODERN MACHINE WORKS 156 N. Milwaukee St., Milwaukee, Wis.

The Matheson Co.
East Rutherford, N.J.

REFRIGERATOR

— OILS —

HOME SERVICE

KROGER SCHOOL HAS ROAD SHOW SETUP

CINCINNATI — A moving picture featuring marionettes, an all-electric kitchen, "still" pictures illustrating cooking processes, and a traveling staff of demonstrators, electricians, and advance agents make the Kroger Food Foundation cooking schools, for which Westinghouse is furnishing all equipment, a complete road show.

Initial school of the series opened in Madison, Wis., Sept. 6. During the first six weeks, the three-day shows played to a total attendance of 48,710 women in Madison, Kalamazoo, Grand Rapids, Battle Creek, Lansing (Mich.), and Muncie, (Ind.).

Continuing the schedule of three days in each city, the schools will visit middle western cities for a period of 35 weeks.

Each day's school is opened with a 25-minute program of moving pictures illustrating marital problems in the average home. Ten minutes at the end of each lecture are also devoted to movies.

Last year a talking picture which was used in the show entitled, "Thought for Food," proved so popular that it was continued on this year's program along with four new films.

In the first new picture, "Buying a Living," President Albert H. Morrill of the Kroger company welcomes the assembled women and introduces Demonstrator Helen Watts Schreiber, Kroger home economics expert. "Partners in Purchasing" features Professor Harry Elmer Barnes, lecturer and economist. A comedy, "Battle of the Bills," takes as its theme the subject of food for the family.

Fourth new film, "The Wife Wins," uses marionettes. The scene is laid in a Kroger store, where beef steaks, carrots, cans of baking powder, bags of coffee, bunches of bananas, and other groceries come to life on the screen, walk about, and discuss their various qualities.

Also included in the kit are educational films which are shown to Kro-

Kelvinator Economists Report on Work

DETROIT—What an active home service department does is illustrated in the chart at the right showing distributor home economist activities during the months of August and September as recorded by Kelvinator Corp.

According to this report, 3,791 prospects for electric refrigerators were noted, 2,029 service calls and 304 home demonstrations were made, and 30,978 women heard the Kelvinator story at cooking schools and demonstrations during the two-month period.

Submitted each month to Kelvin Kitchen by the 34 women in the field, the statistics are compiled in chart form to dramatize their significance. Of particular interest are the "special activities" noted for each home economist.

Miss Wiswell, at the World's Fair in Chicago, reported only for the month of August.

ger employees at a pre-view the evening before the first session opens in each city.

The films used in the school are available by appointment for showings at women's clubs and other organizations.

To provide the women attending the schools with better facilities for seeing and hearing the whole show, loud speakers are installed in the halls, and "still" pictures are flashed on the screen concurrently with the food slides by the lecturer. These slides show clearly what the demonstrator is doing at the time.

First program presented by Mrs. Schreiber is built around "Breakfasts and Luncheons," while the second day she speaks on "Dinners and Desserts." "Serving Leftovers Attractively," concludes the three-day course. Order blanks are given out at each session to enable the women to get further recipes and information from the Kelvinator Food Foundation.

Westinghouse appliances alone are in the show, and include refrigerators, ranges, coffee makers, toasters, waffle irons, food mixers, and lamps. Since the equipment is limited to this company, the audience has the opportunity to see a complete all-electric kitchen in operation.

Traveling three or four weeks in advance of the school, Kroger and Westinghouse representatives lay a barrage of advertising and publicity. A special section is run in a local newspaper in each community, and full tie-ins with Kroger and Westinghouse dealers are made in this issue.

These advance agents—T. N. Zaetsch of Kroger and J. B. Stevenson of Westinghouse—help complete the large staff which brings the Kroger schools to Middle West audiences.

Mrs. Schreiber is assisted by Jessie Gasch and a corps of three electricians and stage hands. W. J. Riler, of the Kroger Food Foundation accompanies the show as business manager.

Cities on the school itinerary follow: Madison, Wis.; Kalamazoo, Grand Rapids, Battle Creek, and Lansing, Mich.; Muncie and Indianapolis, Ind.; St. Louis; Peoria, Ill.; Wichita, Kansas City, Mo.; Tulsa, Okla.

Memphis, Tenn.; Little Rock, Ark.; Evansville, Ind.; Lexington and Louisville, Ky.; Cincinnati, Columbus, Springfield, Portsmouth, and Dayton, Ohio; Huntington and Charleston, W. Va.; Roanoke, Va.; Pittsburgh; Youngstown, Akron, Cleveland, and Toledo, Ohio; Detroit, Ann Arbor, Jackson, Flint, and Saginaw, Mich.

Activities of Kelvinator Home Service Departments In August and September

Home Economist	Company	City	Home						Special Activities
			Schools	Attendance	Prospects	Service Calls	Home Demon.	Radio Hours	
Lilyan Alexander	Southern Public Utilities	Charlotte, N. C.	..	..	..	276	4	2½	18 open house gatherings. Winner in Kelvinator Derby. Sold 4,400 bulletins.
Angela Allen	Raymond Rosen Co.	Philadelphia	6	1,460	21	12	..	3½	1 day of open house.
Alma Anderson	Northern States Power Co.	Minot, N. D.	2	..	..	66	21	2	6 "fast freezing" demonstrations.
Edna Batchelor	Post & Lester Co.	Providence, R. I.	..	..	..	..	..	..	Fourth in Kelvinator home economics Derby. Cooperative newspaper school. 1 day open house.
Nell Brownlee	Southern Public Utilities	Spartansburg, S. C.	..	..	..	173	26	..	
Frances Burton	Southern Public Utilities	Greensboro, N. C.	..	..	..	48	..	%	
Carolyn Ely	Kelvinator Sales Corp.	Boston	4	9,600	..	367	10	..	
Marion Gottlieb	Graybar Electric	Cincinnati	1	43	8	17	67	½	5-day open house. 9 department store demons.
Madeline Handley	Cumberland County Power & Light	Portland, Me.	2	30	14	45	..	..	2 homemaker's clubs.
Phyllis Harris	Kelvinator Sales Corp.	Detroit Branch	7	744	437	4	4	..	6 food store demonstrations.
Clara John	Northern States Power Co.	Minneapolis	..	..	..	11	..	..	17 food store demonstrations. 3 talks to salesmen's meetings. 15 in. of publicity.
Mary Lamb	Northern States Power Co.	La Crosse, Wis.	..	..	..	30	30	..	18 days of open house.
Elizabeth Lauer	Northern States Power Co.	St. Cloud, Minn.	..	..	..	100	..	..
Elinor Lee	Virginia Public Service Co.	Alexandria, Va.	7	..	..	185	..	..	1 homemaker's club.
Addie Malone	Southern Public Utilities	Winston-Salem, N. C.	8	400	..	30	43	..	3 days of open house.
Jeanette Mayhew	Northern States Power Co.	Eau Claire, Wis.	..	..	..	40	1	..	
Ethel McDonald	L. C. Wiswell Co.	Chicago	4	285	141	..	..	..	1 open house.
Hazel McDonald	Northern States Power Co.	Chippewa Falls, Wis.	..	..	..	36	2	..	1 open house gathering.
Blanche Mitchell	Pearson Piano Co.	Indianapolis	3	252	93	52	1	2½	Bridge party. Sold 1,200 bulletins.
Fay Newsome	Listenwalter & Gough	Los Angeles	5	496	..	..	..	..	Booth at county fair.
Norma Niehoff	Kelvinator Sales Corp.	Buffalo	14	750	367	1	3	½	57 "fast freezing" demonstrations.
Alice Olson	Northern States Power Co.	Red Wing, Minn.	11	546	287	27	..	..	Second in Kelvinator Derby.
Ella Outland	Southern Public Utilities	Burlington, N. C.	..	..	..	54	..	..	2 open house gatherings.
Alma Peterson	Northern States Power Co.	Minneapolis	..	..	..	37	33	..	
Roxie Speed	Thurman & Boone Co., Inc.	Roanoke, Va.	8	185	..	169	10	..	
Ethel Stark	Northern States Power Co.	Minneapolis	3	625	14	..	..	..
Odelle Stewart	Clark & Jones, Inc.	Birmingham, Ala.	18	..	..	126	..	..
Dorothy Swift	Consumers Power Co.	Grand Rapids, Mich.	7	317	49	..	..	..
Mary Taudy	Mississippi Power	Meridian, Miss.	1	..	..	11	11	..	
Valentine Thorson	Northern States Power Co.	Minneapolis	..	..	..	..	..	..	20 days open house.
Gladys Vanderel	Northern States Power Co.	Stillwater, Minn.	..	..	..	67	36	..	5 homemakers' clubs.
Catherine Warne	Kelvinator-Bohman	Hagerstown, Md.	2	515	45	41	..	..	Lectured to high school class.
Bessie L. Welch	Mississippi Power	Gulfport, Miss.	4	145	..	..	..	..	17 open house gatherings.
Ruth Wiswell	World's Fair	Chicago	..	11,950	2,315	..	..	..	55 demonstrations.
Total	34		117	30,978	3,791	2,029	304	14	

*Attendance at food store demonstrations.

Century MOTORS



The Capacitor Type Motor is only one of many correctly designed and built by Century to meet different conditions . . . different applications . . . different service—but especially to meet household applications.

Century's interest in electric refrigeration began with the beginning of the industry. Century Motors have played a major part in popularizing the use of both domestic and commercial types. They have always been conscientiously designed, engineered and built to do everything the job requires—and often more. Their ability to "Keep a-Running" has been demonstrated in all classes of service, under all operating conditions, in all parts of the world.

Consult Century Engineers. They will give you competent and unbiased advice on the application of the right motor to the right job—a service backed by nearly 30 years of knowing how to build motors.



CENTURY ELECTRIC COMPANY
1806 Pine Street
St. Louis, Mo.

Offices and Stock Points in Principal Cities

Century Motors are built in Alternating and Direct Current, Single Phase, Polyphase, Split Phase, Multispeed and Special Motors, ranging in size—depending on type—from 1/250 to 600 h.p. Also Motor Generator Sets, Rotary Converters and Fans.

TEM PRITE

Instant Cooling . . . Foam Control
Automatic Temperature Control

FROM all over the country requests are being received from Temprite distributors for more and more selling literature. These distributors are working their prospects by mail, telephone and personal calls and expect to receive lots of orders immediately after repeal of the 18th Amendment. They have a distinct edge in competition because "There is no substitute for a Temprite."

Write for illustrated catalog

LIQUID COOLER CORPORATION • DETROIT

"Originators of Instantaneous Liquid Cooling Devices"

Eastern District Representatives:
MELCHIOR, ARMSTRONG, DESSAU COMPANY
116 Broad Street • New York
Branches: Philadelphia and Boston

A Century of Progress Supplement

THE NEWSPAPER OF THE INDUSTRY

ELECTRIC

WRITTEN TO BE READ ON ARRIVAL

REFRIGERATION NEWS

Registered U. S. Patent Office

ESTABLISHED 1926. MEMBER AUDIT BUREAU OF CIRCULATIONS. MEMBER ASSOCIATED BUSINESS PAPERS.

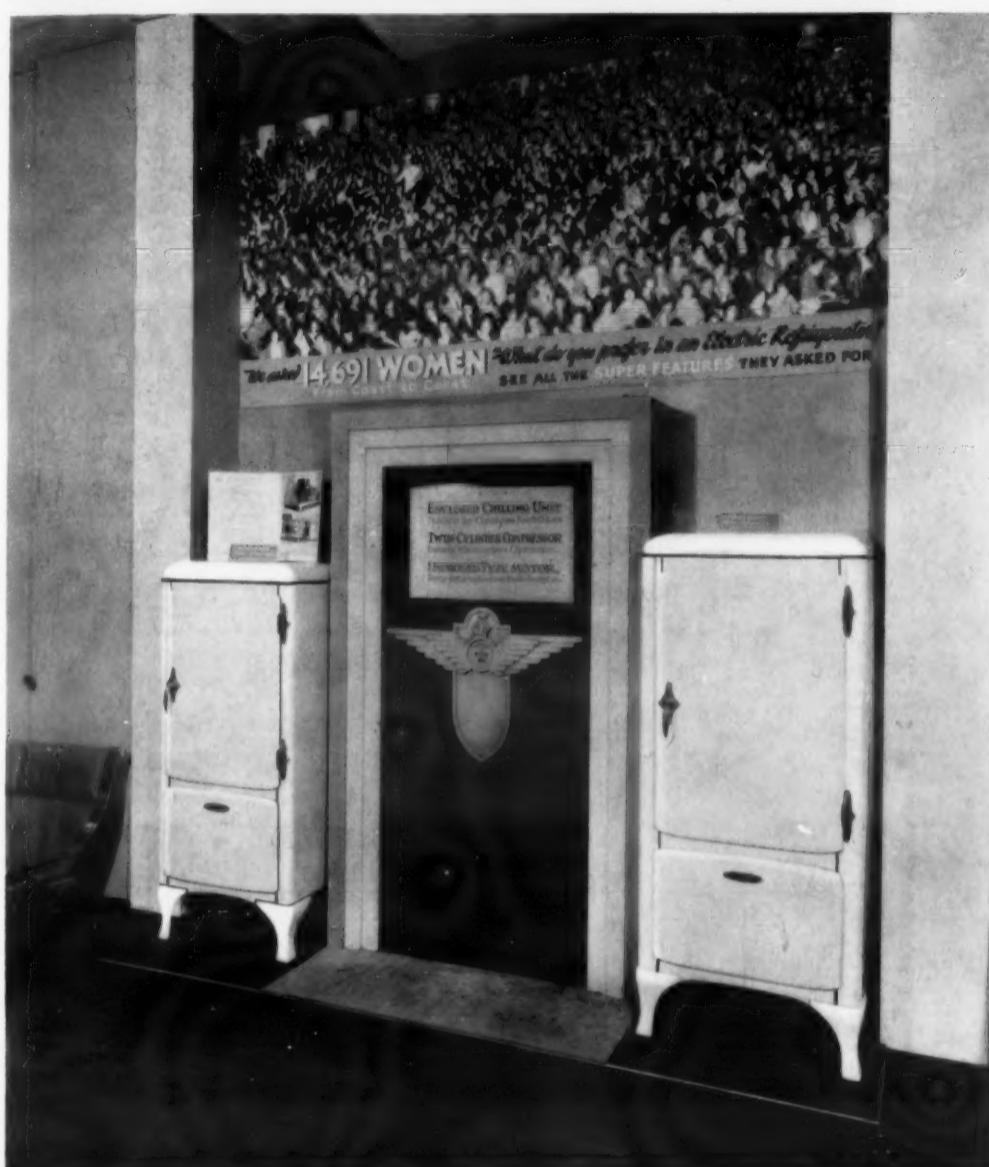
VOL. 10, NO. 9, SERIAL NO. 241
ISSUED EVERY WEEK

Copyright, 1933, by
Business News Pub. Co.

DETROIT, MICHIGAN, NOVEMBER 1, 1933

Entered as second-class
matter Aug. 1, 1927

IN TWO PARTS, PART TWO
TEN CENTS PER COPY



Gov. Joseph B. Ely of Massachusetts (center) takes a turn at the wheel of the schooner Gertrude L. Thebaud of Gloucester, his state's contribution to the Fair.

These crowds passing the garden and flower show are typical of those which have thronged the Fair daily during the past five months.

Stewart-Warner refrigerators are on display in one section of the Stewart-Warner exhibit at A Century of Progress, as shown at the left.



Impressive columns of the Federal building shine luminously against the blackness of the night while electric "mushrooms" light the foreground.

Admiral Byrd's first south polar exploration ship, the "City of New York" (he now has another, the "Jacob Ruppert"), is on exhibit at the Fair, and with it these penguins.

An evening sun mellows interior walls in the "Streets of Paris" concession at the Fair to help the photographer make an old-world painting.





Surrounded by the Court of States, one of the most majestic structures at the Fair is the Federal building with its three towers representing the legislative, executive, and judicial branches of the government. In the foreground is the Italian building.



A little bit of Hollywood in the Stewart-Warner exhibit, where purchasers of movie cameras or projectors have free movies taken of themselves (with A Century of Progress background) as souvenirs for the folks back home.



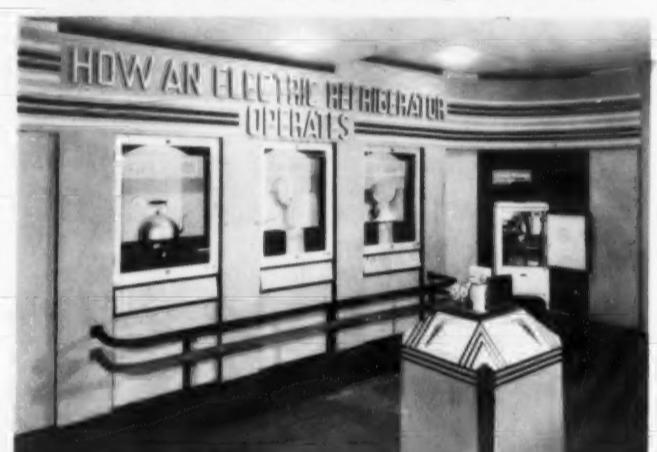
"Just see for yourself" is the invitation of attendants in the Stewart-Warner exhibit, above, where effectiveness of the company's mechanical power brakes is demonstrated.



Visitors at the Fair see in this section of the Stewart-Warner exhibit (above) a complete display of the manufacturer's motor car accessories and mechanical power brake equipment.



To interest home owners who want radios that "fit in" with the rest of their furniture, Stewart-Warner maintains this display of unusual radio cabinet designs at the Fair.



One of the most interesting features of Stewart-Warner's refrigeration exhibit is this demonstration (above) of the electric refrigeration cycle, which uses everyday examples to make the explanation understandable to everyone.



An up-and-coming sweet and lovely young movie star relaxes in her room after a tiring day at the World's Fair: Ginger Rogers rests as she listens to her new Stewart-Warner "Dual Harmony" radio—standing beside the easy chair.

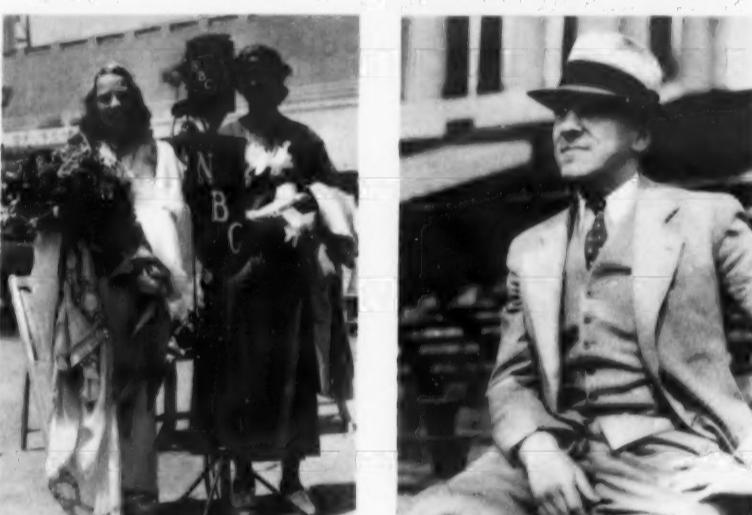


Old methods of lubrication as contrasted with the new are depicted in a large mural (above) which is a decorative and instructive part of the Alemite display in the Stewart-Warner exhibit at the Fair.

Another interesting feature of Stewart-Warner's Alemite exhibit is this automobile chassis and drums of lubricant (right) which show the motorist exactly "where lubrication is needed and what should be used there."



Absolutely guaranteed as a cure for what ails bashful young lovers is this trackless ride at A Century of Progress—the Flying Turns. Its dizzy dips and swings are ideal for "breaking the ice."



Enchanted Island's singing lady, Irene Wicker, and Mrs. John Fox, Chicago P-T-A leader.

T. W. G. Settle, who plans a second attempt at exploring the stratosphere. His first attempt failed.



With the temperature 100½ degrees, members of the Porcelain Enamel Institute take to jinrikisha following their visit to two porcelain enameled houses and after dedication of the Porcelain Enamel Parade at the Fair.



This modernistic home was packed with visitors anxious to discover the character of their future dwellings.



This spotless exhibit, portraying the latest wrinkles in auto greasing, caused many a garageman to shake his head.



Looking south at an unusual Fair building—that housing exhibits in the field of travel and transportation.

Otis and New Achievement



Developers of Famous Alemite Organization Take On Additional Job!

ORGANIZING a refrigeration distributing organization comparable with the Alemite distributor organization in efficiency, co-operative effort and money-making prowess is *SOME JOB!* But the same pair who staged, planned and developed Alemite are *on that job.*

And they're *going places!*

Shortly to be revealed is the line itself. Refrigerators are going through in production volume *right now!*

Joseph E. Otis, Jr. and Frank A. Hiter have gathered around them a corps of refrigeration engineers and designers of proved experience. They have taken off their coats and built a line that has "selling" written all over it. And *how it will sell!*

"Let's Take a Look at the Record!"

You know about Alemite. You know it has built probably the most successful distributor organization in America. Do you know *why*

they're successful? Just three main reasons—Good Business Men—Good Line of Products—Management that **KNOWS** what a distributor **CAN** and **SHOULD** do and what he **CAN'T** and **SHOULDN'T** do!

Alemite distributors sell a lot of merchandise. They make a lot of money!

They made money right through the depression. They're still making it!

Here's the NET of It!

Otis and Hiter have been back of them, giving them the right moves through *two* depressions, with unquestionable success.

Here's the **NET!** Having already built a Distributing Organization in *one* highly specialized line that has everybody wondering how they did it, they are simply applying the **SAME FUNDAMENTAL BUSINESS PRINCIPLES** to build **SOUND, RAPID, PROFITABLE** growth in the refrigeration division.

★ REMEMBER:
The Sky is Full of Comets.
BE SURE YOU HITCH
YOUR WAGON to a STAR!

STEWART
★ *Electric Ref*

Hiter Bring Out the 1934 Stewart-Warner Refrigerator

There's no pulling rabbits out of hats about that!

How Otis and Hiter Work

Otis and Hiter were put at the head of Stewart-Warner Management and Sales several months ago. Nothing in particular was said about it at the time. Probably this is the first time you've heard of it. There wasn't any big ballyhoo about it. Nobody waved any flags. These two weren't going to do any flag waving until they had something to wave flags about.

All this time they have been at work with their engineers and designers and production men—but quietly. While nobody knew their plans and nobody knew what direction their next move would take, they were waiting—waiting until they had a line of products that would sell, stay sold and sell more by virtue of finer performance. In other words, they wanted a product back of which they could honestly put every ounce of their belief, their energy and their drive! They wanted to have back of them a refrigeration line which could achieve as big a distribution and sales success as Alemite has achieved in its field.

Now they have it!

STEWART-WARNER CORPORATION, Dept. 5, 1828 Diversey Parkway, Chicago, Illinois

What Kind of a Refrigeration Tie-Up Should YOU Make?

Well, you want a successful organization behind you. Not the flash-in-the-pans that make a big glare and die next season. Not a comet! The sky has been full of them. A flashy streak of fire—and then it's all over!

Tie up to a STAR that'll be there tomorrow night and ten years from now when you go out to look for it!

Tie up with men who have built and are building LASTING SUCCESS!

Tie up with men who know your problems as a distributor—who know how to give you the right moves at the right moment—who can steer you away from the rocks that have wrecked many a distributor's success.

Tie up with men who understand distributing high-priced units with the least sales friction.

Put them all together and they spell this—OTIS — HITER — STEWART-WARNER ELECTRICAL REFRIGERATION LINE FOR 1934!

Put that spelling on *your* contract!

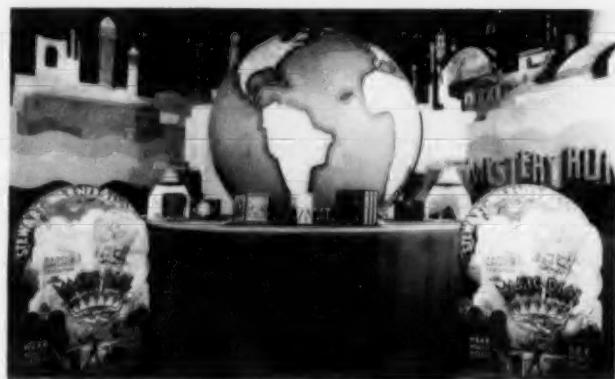
And you'll go places!

!

**YOU OWE IT TO YOURSELF
TO CONSIDER THIS LINE
AND WHAT IS BACK OF IT,
BEFORE YOU MAKE A DECISION. ONLY A FEW TERRITORIES STILL OPEN! WRITE!
WIRE! OR PHONE US DIRECT!**

STEWART-WARNER

Refrigeration



A treat for DX fans (those radio enthusiasts who sit up until dawn) is this globe, on which are located some of the world's most powerful stations.



Ben Bernie and Phil Baker, who look something alike, team up for a broadcast from the Fair grounds.

From kettles to clutch assemblies range the products of the Stewart Die Casting Corp., exhibited at the Fair.



A huge wave-length indicator and an Oriental setting center attention on the power of the "magic dial" radio at Stewart-Warner's exhibit at the Fair.



Looking south at night, a scene which many visitors to the Fair declare to be the most beautiful of all.



An Indian Princess finds this spot in the horticultural exhibit an excellent place to wash her No. 3 tootsies.



The General Exhibits group, where you can see a little bit of everything, is usually one of the first to be visited.



Lots of visitors from the East and South entered the Fair through this gate. The 23rd street entrance, on the Outer Drive, a main artery into the city, is an inviting spectacle at night.

Loretta Young, credited by a well-known director as having more charm than any other movie actress, selects a Stewart-Warner radio in the French Commode style to complete the furnishings for her home.



This huge illuminated "Red Crown" is one of many fascinating sights inside the dome of the Travel and Transport building, shown above.



Looking through the portals of the Horticulture building across the lagoon to the giant thermometer which reminded visitors to the Fair how hot they were.



Above, a lone visitor awaits a boat at the water gateway to the Electrical building, while a group of navigators discuss the possibilities of transporting him safely.



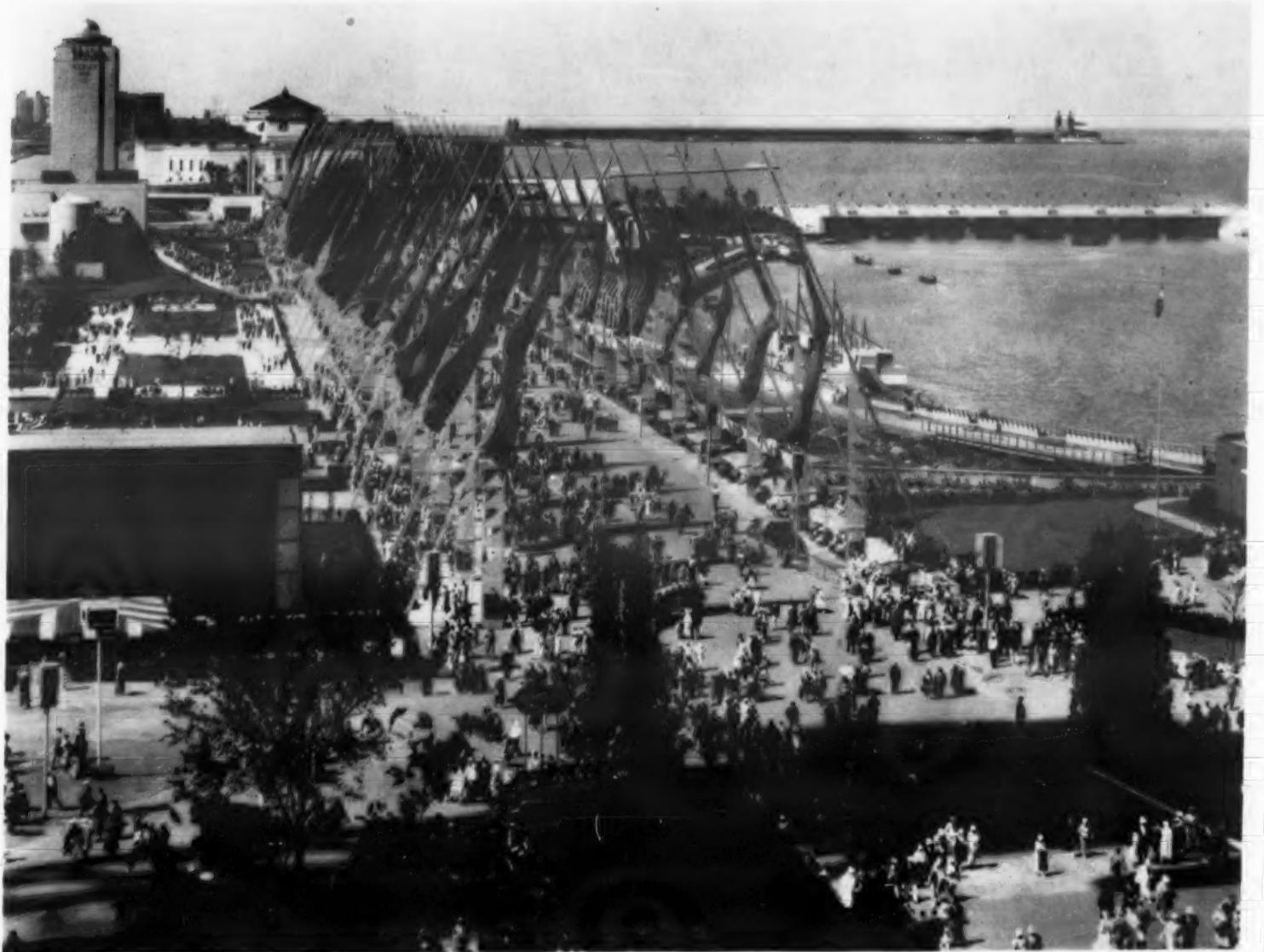
Lilyan Tashman, who sets the styles for other movie stars, registers pleasure upon receiving a Stewart-Warner table model radio from Edmund Lowe, her real-life husband.



Like sprays of fire these fountains light up the Fair lagoons after night has fallen.



Prospects for Stewart-Warner movie camera equipment had the thrill of hearing a director shout "action" as their pictures were taken for a souvenir movie of the Fair.



The Avenue of Flags where, if you stood on vigil for the duration of the Fair, you would probably see everyone that you ever knew, and 15 or 20 million other people in the bargain.